XXXIV. *Some Observations on the Gothic Buildings abroad, particularly those in Italy; and on Gothic Architecture in general. By T. Kerrich, M. A. F. S. A. Principal Librarian to the University of Cambridge.*

Read 11th and 18th May, and 1st June, 1809.

By the Gothic I mean the light style of Architecture which has been long known by that name, and was the mode of building most in use, all over Europe, during the thirteenth, fourteenth, and fifteenth centuries.

When it received this appellation, has been much disputed: Torré intimates that it was first so called by Cesare Cesariani, in his Commentary on Vitruvius. But it seems to have been the custom, upon the revival of antique architecture, and classical learning, to give the name of Gothic, by way of reproach, to every thing in the arts, as well as in literature, which differed from, or was not formed upon ancient models.

They took no notice of the great variety and different modes of building that had prevailed in all the ages, from the decline of the Greek and Roman architecture, to the end of the fifteenth century; but threw them altogether into one great class of things barbarous and Gothic, from which they were to turn their eyes, and which they thought were studiously to be avoided. However, a distinction was at length made between the old, heavy, clumsy style of the earlier ages, and the light, airy one which succeeded; and the terms *Heavy* and *Light* Gothic were introduced, I believe, before the end of the sixteenth century. In the time of Vasari and Lomazzo, the Light Gothic was called Maniera Tedesca; and Vasari falls upon it with great virulence, and calls it a curse, which had lighted upon the whole of Italy, from one end of it to the other.

In later times it has been the custom to restrain the term Gothic to this light style only, and it has long been so called; and that name was received all over Europe: we find it continually used by all the travel writers, and in the guide books of the different cities upon the continent, as well as by writers on the arts themselves, during the whole of the two last centuries: and it was so well established, and every body understood, and knew so exactly, what it meant, that it really does appear to be a great pity people would not rest contented with it. It answered completely all the purposes of language; and much confusion has been caused of late by the introduction and unsteady use of new and dubious names; and a vast deal has been written, which might have well been spared.

The Italians call the old, heavy style of building, Lombard Architecture, because they conceive that it was in fashion during the time that the Lombards were powerful in Italy: and we, for a like reason, call it Saxon and Norman: but the architecture is the same. And it is a most striking phænomenon, and not easily accounted for, that the same style of building was so widely diffused over Europe, and that it should have prevailed in every country, as it really appears to have done, nearly at the same time.

The cause of this wonderful consent, and similarity of style, certainly deserves investigation. The fact was not overlooked by those who first (I mean in later times) turned their attention to the history of architecture; but instead of examining into the matter as they ought, they seem to have solved the difficulty hastily, and wrong. They took it for granted that it must have been brought to us, from some distant country, ripe and adult, and in its full vigour; and that the various people of the western world implicitly received it, and made use of it exactly as it was delivered to them, without making any alterations, or exercising their own judgment at all concerning it. And they would, of course, naturally enquire from whence it came, and by whom, and at what time it was imported. They indulged themselves in various conjectures—they brought it from the north, from the south, and from the east. Goths, Arabs, and Indians, have all been honoured with the invention. And it was not till very lately, that men, finding all these notions entirely destitute of facts, by which they could be supported, began to look nearer home; to observe the buildings around them; to compare them, and remark their varieties, connections, and relation to one another: and, on considering the nature of the objects themselves, and the abilities required for their production, they began to perceive, that not only creative fancy and talents, but even the ignorance and inability of Europeans in the middle ages, and the clumsiness of their artificers, might contribute to form this new and unheard-of style of building.[a]

Mr. Walpole says, and says well, "When men enquire who in-"vented Gothic buildings? they might as well ask, who invented "bad Latin?" But this can be meant only of the old, heavy Gothic. And when he goes on to say, "Beautiful Gothic Architecture was "engrafted on Saxon deformity, and pure Italian succeeded to vitiated "Latin," we must pause a little to consider whether the parallel here holds good. At least we must take the liberty to point out this difference: the Italian still retains a great resemblance to its mother language; but scarcely any trace is left of Greek or Roman Architecture in that which we call Gothic. We deny not that it might have the Antique Architecture for its basis and foundation; but we may venture to affirm, that, even admitting that to have been the case, so much of later invention, or derived from other sources, has been mingled with it, that it has assumed a form entirely new, of a character peculiar to itself, and perfectly distinct and different from every thing that had appeared before.[b]

Whence all the various materials were collected, or who arranged and disposed them in the beautiful order, and with the admirable uniformity, in which we now see them, it is impossible for us to discover at this distance of time, and without any assistance but what the buildings themselves afford. Perhaps every country contributed something, which, if it was found consonant to and agreeing with the reigning taste in every age, was immediately adopted and received by the rest: so that no one people could claim the invention of the architecture which they all used.

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[a] See Notes 1 and 2 (A) and (B).

[b] Note 1 (A).

But the great questions commonly asked are, "What was the origin of the Pointed Arch? and when, where, and by whom, was it "invented?"

Now let us consider for a moment the nature of these questions. What, in reality, is their object: and what answers can possibly be expected to them; or whether they do indeed admit, or are capable of any answers.

As to the figure itself, that is very ancient indeed, and must have been as well known to the Romans, Greeks, Egyptians, and all the different people of antiquity, as it was to the Gothic Architects themselves who used it. Whoever had demonstrated the very first proposition of Euclid, must have drawn it.

But—"Who first *built* an Arch of this form and figure, and what "led him to think of doing such a thing? What led to the invention?"

We cannot surely hope ever to obtain a satisfactory answer to the first question. Several theories have been devised as to the circumstances that might furnish hints for the discovery, or invention as it is called; or rather, might put men upon erecting such an Arch.

Mr. Bentham had one, Mr. Essex had another, and Sir James Hall a third: and two or three others might be offered, just as plausible as any of theirs. But as most of these theories propose rather to shew and point out what *possibly might* have induced these architects to build the Pointed Arch, than what *did actually make* them do it, they are but theories—they are of little value.[c]

We ought carefully to distinguish between invention, and what might lead to the use of things that were long before invented, and were generally known.

Leaving this then as a *hopeless*, if not a nugatory, enquiry, we will only remark, that such Pointed Arches as we are speaking of, which have long been called Gothic, were built in England, and, as far as we know, in the other countries of Europe, as early as the beginning of the twelfth century; and before the end of it, became very common.

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[c] Note 2 (B).

But the Pointed Arch alone does not constitute Gothic Architecture, though it may be peculiar to it, and has produced a new and endless variety, of which the other kinds of architecture are incapable.[d] Its light pillars, long, thin shafts, elegant foliages and vaultings; its tracery, and numerous other graceful and nameless forms of beauty; are equally essential, and full as important to its general character.

However, we are not to suppose it was always thus delicate and finished. It struggled for some time with the remaining coarseness and rudeness of the more barbarous ages, before it shone forth in this new and splendid form. And notwithstanding all its charms, we may remark, that light, and beautiful, and elegant as it was, it did not long continue in the world. For little more than three centuries did it exist pure and unmixed. In the twelfth century it was not quite freed or disentangled from the old architecture; and what we had of it in the sixteenth, was joined to bad imitations of the antique, with Arabesques, and small ornaments, such as the Italians had borrowed from the ancients; as may be observed in Bishop West's Chapel at Ely. The first of these impure and adulterated styles has been called *Norman Gothic*; and the three ages, when it existed in its purity, have been distinguished also by similar names; as *Gothic* (properly so called), *Ornamented Gothic*, and *Florid Gothic*. But perhaps it would have been better to have simply distinguished them, as Vasari has the different styles of painting, by the centuries in which they flourished: for people will not be contented with such names as these; they will be continually meddling with, and altering them, in hopes of making them more expressive; and there is always great danger of their giving rise to wearisome dissertations and frivolous disputes.

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[d] Note 3 (C).

This could not well be the case, if they were named only from the centuries; there would be no room for altercation. Vasari's system still obtains, and we all perfectly understand, without any vexatious discussions or ambiguity, what is meant by a 2 *cento*, 3 *cento*, 4 *cento*, or a 5 *cento* Picture, without any circuitous explanation.

It is remarkable that, in all the arts, the period of about a hundred years has commonly produced a sufficient change to mark and constitute a fairly distinct style: and, as it has been admirably well observed,[e] this style, or peculiar manner of every age, is a thing so very delicate, as well as determined, that no other age can imitate it exactly. But though this does appear to be certainly true, and the decidedly distinct and different styles agree, as we have said, with the number of the centuries, I would by no means be understood to assert, that they began and ended abruptly with those centuries, or that any one of them was in fashion, or kept its ground, exactly a hundred years. Some had a longer, and some a shorter period of duration; and all the changes obtained, and were brought about by degrees; and one style began before another ended: yet there is, in each, something so characteristic, that we rarely meet with a building, a picture, or a piece of sculpture, which might not be readily referred to the age in which it really was produced, by a man versed in these things, and who had been accustomed to consider, and study them. Yet though these different styles are thus clearly distinguishable from each other, there is still a character so entirely and completely its own in Gothic Architecture, diffused through all the ages of it; the genius of it is, so different from, and unlike any thing else, that we may fairly assert no Architecture whatever had more congruity, or was throughout, more of a piece with itself, than this. The principles of it, upon which undoubtedly this congruity and uniformity depend, are unfortunately lost: no books are known to exist that give us any information. We know not even the names the Gothic Architects gave to any of their ornaments: those we now use are all of modern fabrication. It is possible some treatises of architecture may be found in conventual libraries abroad: if we had any in England, they probably perished at the Reformation.

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[e] Mr. Wilkins's Essay, in the 12th vol. of the Arch.

But though no books remain, such a prodigious number of buildings are left, that it is not unreasonable to presume the principles and rules by which they were designed might yet be retrieved, if men would fairly set themselves upon the investigation. Till these rules are discovered, all our attempts to build in the Gothic style must be unsuccessful. Mr. Essex, and, I believe, others of the more sensible men that have undertaken to do it, readily owned that they were doing nothing but imitating particular buildings, or parts of buildings; and their works surely correspond with this confession. They are commonly made up of incongruous and disagreeing parts, collected from buildings of the best ages, coarsely copied, and so placed, and put together, as no Gothic Architect would have disposed them.

Even the smallest fragment, therefore, of any works of the three good ages of this architecture must be valuable, and may possibly be extremely important. It is lamentable to see them destroyed; and perhaps still more provokingly so, to see them modernized, or (as they call it) improved. Attempts to improve, where men have no knowledge, must be absurd: and when we hear of great improvements to be made in this or that cathedral, or great church, we have cause to tremble; we may be sure some irreparable mischief is at hand.[f]

When people destroy these structures, they deprive the world of the sources from which, and from which only, knowledge and information of this kind can be drawn: to preserve them is meritorious: but let us remember, it is *absolutely impossible* to improve them. It would be scarcely more absurd to think of altering Virgil's Æneid, in order to make it better; or of adding force and beauty to one of Cicero's Orations, by cutting out some of the sentences, and supplying their place with modern compositions of our own, which we might foolishly imagine were more correct and vigorous. In this case, indeed, no great harm would be done: every body would laugh, and the things would remain as they are: neither the poem nor the oration would suffer. But these old buildings must be considered as rather resembling ancient manuscripts, which may perhaps be unique; and if such be mangled, or interpolated, the evil can never be undone; the business is at an end; the thing is lost for ever. And if the alteration should be so cleverly made, and the additions so dexterously inserted, as to deceive and impose upon the world, the matter becomes worse a great deal; it can be considered then but as an ingenious fraud.

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[f] See Gray's Letter to Bentham, Gent. Mag. for April 1784, p. 244.

Our ancestors, in the former part of the last century, and in that before it, despising Gothic Architecture, and blind to all its beauties, neglected, rather than destroyed, the remains of it in England. They built up Grecian altars, and altar-pieces, and galleries, in Gothic churches and chapels; and these strange improper things of their own erecting and invention seem to have been the only objects of their admiration. The very same was done in every country upon the continent; and as the genius of the Roman Catholic religion led them to more expensive decorations than we protestants admit, they carried this absurdity much farther: magnificent altars, statues, sculptured monuments, and pictures, engrossed all the attention, not only of the inhabitants themselves, but of strangers and foreigners, who visited their countries. The Gothic churches themselves were not noticed; they were considered as mere receptacles for the great works of art, with which they were crouded, and were never mentioned by travellers on their return home, nor by the writers of travels.

And this may have contributed to establish an opinion, which has been entertained, that there is little or no Gothic Architecture to be found abroad; that it was invented here; and what the other countries have of it, was derived from us: that we have an exclusive right to it, and that it ought to be called *English* Architecture.

The late Mr. Gilpin, I believe, first broached this notion:[g] at least he first delivered it to the world in print: he had never been out of England; he was therefore excusable: but how people that had travelled, and had visited the other countries of Europe, could patronize such a notion, is really surprising: they must know, unless they voluntarily shut their eyes, that throughout the Low Countries, from St. Omer's to Cologne, the old churches are all Gothic; and many of them immense structures, and wonderfully beautiful; such as the Cathedrals of Antwerp and Mechlin, St. Gudule's at Brussels, and St. Bavon's at Ghent, and numberless others. The whole of France is covered with them, from Calais to Lyons; and quite to the banks of the Rhine, where the Cathedral of Strasburg is eminently light and beautiful. The Cathedral and Church of St. Nicaise at Rheims, the Cathedrals of Amiens, Rouen, and Evreux, are also well known as buildings of extraordinary dimensions and elegance in this style of Architecture.

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[g] Gilpin's Northern Tour, Vol. I.

According to Ponz's Viage de España, and the writings of other travellers, the case is the very same in every kingdom of Spain.

This style of building is so very general, and is spread so widely over the whole of Germany, that many people have thought that, in all probability, it really had its origin there. The Italians, as I have before observed, call it German Architecture, and so appear to acknowledge the justice of this opinion. But no great stress can be laid upon their so naming it, because, I should think, it would only argue that *they* received it from that country, were there not other reasons that incline us to believe Germany has, upon the whole, rather the best claim.

That it prevailed in Italy, in all its different styles and ages, there can be no doubt; the buildings now existing there would be an incontrovertible proof, though Vasari, and the other writers had spared their bitter execrations.

As these buildings have never been described, indeed scarcely mentioned, by the numerous writers who have travelled into Italy, and undertaken to give us an account of it, I beg leave to lay before the Society a few sketches and memorandums, that I made upon the spot, concerning some of them; which, slight and inaccurate as they are, may be sufficient to shew that their Architecture was the same with ours, and, as far as we can find, at the same periods of time.[h]

The Cathedrals of Placentia, Parma, Modena, Cremona, and Pavia, are all of what we call Norman Architecture; and do not differ more from some of our churches in England, than our churches do from one another: though I do not know that we have any, where the whole of the original west front remains so perfect as it does in these: ours have in general been all gothicized, entirely or in part. That of Castle Rising Church, in Norfolk, is the most nearly complete of any I recollect to have seen in England.

I made sketches of the fronts of the three Cathedrals of Placentia, Parma, and Modena, which accompany this paper.[i] The Cathedral of Pavia has been modernized: of that of Cremona there is a print in Campi.

Other Churches in the same style, in Italy, are, St. John Baptist's, St. Ambrose, and St. Giovanni in Conca, at Milan; the Cathedrals of Genoa and Spoletto; the Great Church at Civita Castellana, and S. Francesco at Assisi; and numberless others, no doubt, which I have not seen.

S. Francesco's, at Placentia, is of what we call Norman Gothic: I have made a plan and section of it.[k]

Of the Light Gothic are the Churches of Santa Croce and Santa Maria Novella at Florence, and the Cathedral there; though in this there is a considerable mixture of Saracen ornaments. The Cathedral of Arezzo; the fronts of the Cathedrals of Orvieto and Siena; St. Anthony's Church at Pistoia; St. Frediano at Lucca; and, above all, the Cathedral of Perugia, and the little Church, de la Spina, at Pisa, are particularly light and elegant.

The Campo Santo and Baptistery at Pisa, are well known, and have already been sufficiently described in the Archæologia.

And last of all, I will offer some remarks upon the Great Church at Milan; perhaps the largest and the most magnificent Gothic Church in the world: it was founded by the first Duke, John Galeas Visconti, towards the end of the fourteenth century; and agrees perfectly, as to style in general, with the churches built in England, and in the other parts of Europe, about the same time; though there are certainly some things in it very extraordinary, and such as are hardly to be met with in any other building.

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[h] Plates XIX. XX. XXI. XXII. XXIII. XXIV. XXV. XXVI. XXVII. and XXVIII.

[i] Plate XXIII. XXV. and XXVI.

[k] Plate XXIX.

It is an immense structure, superior in size to every other church in Italy, except St. Peter's at Rome. It is built of brick, and is cased within and without with marble, except the inside of the roof, which has been plastered and painted. The west front is unfinished, and has Grecian doors and windows, with a mixture of some Gothic ornaments, which, of course, are extremely aukward, and give it a disagreeable appearance. The body of the church consists of a nave and four ailes; or, as they call them, five naves. The transepts have only two ailes. The pillars, which support the arches, are composed each of a large round one, with eight smaller ones joined to it. The capitals are rich with fruits and flowers and foliage, and, I believe, are all different: above them, in each pillar, is a kind of band or fillet of niches or tabernacles, in which are statues, eight over each pillar. The canopies over these statues, and the pedestals on which they stand, are all different:[1] indeed in some of the pillars, I believe, there are scarcely any niches at all, only plain spaces, against which the statues are placed; but whether there be niches, or only plain spaces, the statues are always placed directly over the intervals, between the small pillars, where the principal round pillar appears; and the little pillars, or finials, between the niches, are over the small pillars of the shaft. Above these niches are pillars of the same construction with those below them (that is, composed of one large round one, and eight smaller joined to it), and these immediately support the vault. The window at the end of each transept is very remarkable; the lower part of it is pushed out like a modern bow-window, and the head of it left in the plane of the wall, which makes, in the whole, a kind of Gothic window, which I never saw any where else.

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[1] Plate XXX.

The outside of the building is not nearly finished. Very few of the small spires or pinnacles, which make so magnificent an appearance in the prints and views of this church, are yet built. The dome only, and the principal spire, are finished; and the former, when I was first at Milan, still wanted the statue of the virgin to complete it. This was put up during my stay in Italy; a prodigious figure made of copper.

Till we went upon the roof of the church, I had no idea of the vast profusion of delicate ornaments and Gothic work, or of the astonishing number of statues and relievos, that we found there; some very small, and many of them good. They are of very different degrees of merit, and were made in different ages. I observed one that was antique, and only one; a female figure, and that so placed in a corner, that it was not easy to see it to advantage.

It is extremely singular that there is no covering of tiles, or lead, or copper, or any roof of timber, to this church: it is merely vaulted over, and upon the vaulting are laid large slabs, or planes of marble, to carry off the rain and moisture.

We have nothing in England that can bear any comparison with this building, as to the immensity of the work, or the astonishing and endless labour that has been expended upon it. Some modern critics have called it the very acme, and ne plus ultrà, of the absurdity and folly of Gothic Architecture:[m] and however we may differ from them in this violent censure, we may observe, that it proves clearly they allow its pre-eminence and superiority to every thing else of the same kind.

And possibly, if they had taken into consideration the aim and intention of the people who executed this great work, they might have found it wise to have been less decisive, and less severe.

It was not the object of the architects or authors of these Gothic buildings merely to strike the senses with what is externally grand

[m] Cochin and Richard.

and beautiful: we must recollect that there are two kinds of feelings to be satisfied. What is beautiful or charming to the eye may not always be so to the understanding. Gothic Architects did not neglect those beauties which strike the spectator with ideas of grandeur, with dignity, and with awe: their works possess those qualities in an eminent degree: but they did not stop here; they meant to satisfy, and (if I may so speak) even satiate the beholder's mind with the intrinsic merit, the richness, the finished excellence, of every the smallest, the most minute, and most hidden part of what they executed. They appear to have courted scrutiny and investigation. They seem to have wished that their works should, in some measure, resemble those of nature, which continue to unfold new beauties, and new miracles, the more, and the more closely they are examined. They abhorred the very idea of any thing like deception or imposture in their buildings; and would have discarded with contempt, and almost with horror, when they were erecting a temple to the Deity, the stucco, the artificial marble, the plaster walls, and all those substitutes, which we now employ and admire, and which are intended to look like something that they are not.

They would have considered them as only fit for the decoration and construction of a theatre; where we expect not any thing that is real or substantial. They meant, in a word, that their churches should not only be striking and beautiful, and grand, and solemn; but also rich and expensive, in reality as well as appearance; and intrinsically valuable, and durable, and solid.

I will only add, that of the Great Church of Milan there are several prints, particularly four by an engraver of the name of Poer, which give a fair general idea of it; they consist of a plan, two sections, and a N. W. view. But it would require a large volume to display all its numerous beauties in detail.

Read 16th May, 1811.

To Nicholas Carlisle, Esq. Secretary to the Society of Antiquaries,
&c. &c. &c.

DEAR SIR,

I AM much flattered that the Society think my Dissertation upon Gothic Architecture worth publishing; and I here transmit to you the Notes which I wished to add to it. I could further wish it should be understood, I am so little attached to what is contained in it, that I shall be ready to give up any part, or even the whole, of what I have advanced, should it appear to disagree with notions better founded, or be incompatible with facts that are more clearly proved, and established.

It is by no means my intention to enter into disputes: I have no systems or theories to defend: my only object, in what I have written, was to state some things which are not generally known, and to propose some hints, which I thought might lead to further discoveries, in a matter with which we seem to be, at present, but little acquainted.

I am, dear Sir, with great respect,
Your obedient and humble servant,

Cambridge, April 12, 1811.
T. KERRICH.

NOTES AND ILLUSTRATIONS.

Note 1, p. 294. (A.)

No man had examined, and compared more buildings of all the different ages of Gothic Architecture than the late Mr. Essex, of Cambridge. He had also studied regular Architecture, with great attention, under Sir James Burrough, and must be considered as a good judge in this matter. He was fully convinced that the old Architecture of the middle ages, was derived from the Roman; but he held some singular opinions as to the particular modes in which the builders of those times followed the examples of the antients. According to him, it was not only the clumsiness and want of science in the artists, that rendered their imitations extremely lame and defective; but their frequently taking great liberties, and perverting what they meant to copy, by applying it, or parts and members of it, to purposes for which they were not designed.

One of his favourite notions concerning their churches is so ingenious, and, I believe, so completely his own, and is withal of so much consequence, if it be well founded, that I am glad of this opportunity to make it known.

Omitting the smaller oratories which were without aisles, he thought all our old churches might be reduced to three sorts.

I. Those with pillars and arches, which separated the aisles from the nave, and immediately supported the roof.

II. Such as had a tier of windows over the arches.

III. Those which had two tiers of arches, and windows over them; or rather three tiers of arches, one above the other, and windows in the uppermost.

When the barbarous nations who, after the fall of the Roman empire, overran Europe, were converted to christianity, there might be a sufficient number of churches remaining, in every country, to serve as models to their architects: and though it was probably quite out of their power to imitate the larger ones, we certainly do find many churches of the first and second sort still standing, which were built in the middle ages, and appear clearly to have been copied from some of the less magnificent of those erected by the Romans, soon after the time of Constantine. See plate XXXI. where figs. 2 and 5, which are taken from old Gothic churches, do not differ materially from figs. 1 and 4,[a] when they are stripped of their more delicate ornaments, entablatures, and bold projecting cornices, which these workmen had neither skill nor taste to execute.

But when vast and magnificent churches of the third kind were to be constructed, such as they erected in the latter part of the eleventh, and in the twelfth century, those models would no longer be sufficient. To raise superstructures at all corresponding to plans of such immense extent, they must have either made the intercolumniations very large, and the arches, of course, extremely wide, and both difficult and expensive to build, or they must have made them of a disproportionate and enormous height for their width. What was to be done in this dilemma, and where could they find patterns of edifices which had altitude sufficient for their purpose? They had daily before their eyes, in Italy, examples of buildings with two, three, and four tiers of arches, one above the other, in the Theatre of Marcellus, and the Great Amphitheatre of Vespasian, at Rome; the Amphitheatre at Verona; and, in all probability, many other buildings of the same kind which have not lasted to our time: works so important, and of such magnitude, could not possibly have escaped their notice: They adopted the mode of building which they found in them, and made use of it in the structure of their churches; and this produced the third kind, so remarkable for its magnificence and grandeur. See plate XXXI. figs. 7 and 8.

Now if it could be shewn that this notion of Mr. Essex's was well founded, or if we admit, for a moment, that this was probably the case, let us consider how many things, which have hitherto appeared inexplicable, would immediately be cleared up. The greater heaviness, which is so striking in these vast buildings, would be accounted for at once. The architects had now taken quite different objects for their imitation; they now separated the aisles of their churches from the nave, with piers instead of columns, and on them they built their arches; and having placed piers, with half-columns attached to them, in a situation where columns only had been ever seen before, the two ideas of pier and column seem to have been, in some sort, confused together, and we directly perceive how they came to erect pillars so very massy, and of such prodigious thickness for their height, as well as piers with a multitude of half-columns joined to them. Indeed, the idea of a pier with a column attached to it, seems never to have been entirely lost; and sometimes we find these heavy pillars, and piers, with little columns joined to them, placed alternately in the same row, as in the transept of Ely Cathedral: sometimes, but more rarely, great cylindrical pillars only, as at Southwell; or piers only, as at Wymondham, in Norfolk, one of the heaviest churches I have seen, in which the intercolumniations are scarcely greater than the breadths of the piers.

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[a] Fig. 1 and 4 are taken from the Churches of St. Constantia and S. Stefano Rotundo, at Rome.

Let fig. 7, plate XXXI. be the outside of one of the amphitheatres, or theatres of the ancients; leaving out, as before, the entablatures and capitals of the columns,[b] &c. which were too bold, or too delicate, for their workmen to imitate, the remainder would be very like fig. 8, which is taken from the inside of a Norman Cathedral, where we may observe, over each tier of arches, a vestige of the entablature is still retained in the small string-course, or line of stone running along the surface of the wall, where the entablature ought to have been. The half columns, thus deprived of their capitals and ornaments, soon shrunk and degenerated into the unmeaning shaft, marked A, which neither supports, nor appears to support, any thing, or to be of the the smallest use.

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[b] When the entablature was gone, the capitals of the columns would be useless.

But the Gothic Architects of the thirteenth, fourteenth, and fifteenth centuries, turned this small shaft to very good account; and, by restoring to it a capital, and at last, leaving out entirely that part of the string-course which crossed over it, produced their elegant and slender pillar, from which branched out all the delicate and beautiful tracery of their vaulted roofs. See plate XXXI. fig. 9, A and B.

We may observe further, that the using these immense piers instead of columns, enabled the architects to construct, behind them, vaults over the aisles; and indeed the buildings they now imitated furnished them with examples for so doing.

Lastly, it may be remarked, that the pointing out, or producing thus, the two distinct original models from which the artists worked, namely, arches raised on columns, and arches raised on piers, would explain most clearly what has hitherto appeared difficult and perplexing above measure; how two modes of building, so completely opposite to each other, both in their plan and in their superstructure, could be derived from one and the same species of architecture. In the one the pillars or piers are low, and of enormous thickness, the intercolumniations very small, and the arches narrow and clumsy; in the other (as at Orvieto, and in the eastern part of Canterbury Cathedral) the pillars, or rather columns, are tall, and the intercolumniations prodigious, with lofty arches of a vast expanse.[c]

The architects, grown more skilful in constructing, and by far more bold in their designs, seem to have been ambitious of shewing the world that they were no longer restrained by the ignorance and want of powers under which their predecessors had laboured, but that they were able to execute any design, however vast or difficult. They no longer had occasion to pile arches one upon another, in order to attain altitude, but could construct, or, if I may use the expression, magnify a church of what is here called the second species, to the dimensions of the largest and most magnificent of the third kind that had ever yet been erected; as we see in the Cathedral at Milan.

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[c] These two distinct modes of building may be traced in every age of Gothic Architecture, from the twelfth century quite down to the beginning of the sixteenth.

I am aware that there may be several objections to this theory, and some perhaps that are not easily to be removed. One particularly is very obvious. It may fairly be asked, why these old architects did not, when such large buildings were to be erected, rather imitate some of the magnificent churches of the antients, than apply, on such occasions, to theatres and amphitheatres for examples? St. Peter's in the Vatican, St. John Lateran's, and that of S^{ta} Maria Maggiore, being built upon columns, with architrave, frieze, and cornice, might be beyond their powers, but why did they not take St. Paul's at Rome, which is built with arches in their own way, for their model?

To which it may be answered, that such a prodigious space of blank wall between the arches and the windows, as we see in that church, would have shut up a great chamber over the vaulting of the aisle, on each side, totally dark, and perfectly useless.

But it is not my intention to defend Mr. Essex's hypothesis; it must depend upon its own merit, and must stand or fall, as it may be confirmed or contradicted by further observation and discoveries.

Note 2, p. 294 and 295. (B.)

The theories of Mr. Bentham,[d] and Sir James Hall,[e] are well known, and the following may also be offered:

I. The old architects, in the middle ages, had sometimes occasion to construct arches lower than a semicircle; that is, whose height was less than half their span or diameter; and they built them of very different forms, some extremely low, as the Great Arch at Tickencote, and others nearly as high as a semicircle.[f] Now supposing they were not acquainted with the cycloid, or the ellipsis, which was probably the case, what could they do? The only method, they could take, was to use arcs of different circles: three would be sufficient for

[d] Bentham's Hist. of Ely, p. 37.

[e] Transactions of the Royal Society of Edinburgh, Vol. IV. Part II. p. 14, &c.

[f] I believe these are all called Oval Arches.

their purpose, as in plate XXXII. fig. 1. And they might vary the arches as they pleased, by removing the centers D and C of the circles ABC and DEF, figs. 2 and 3. As they could also, in another way, by taking the center of the third circle XBEZ, fig. 3, upon a line drawn at right angles to the diameter of the arch AF, through the middle point Y, (between the centers G and H), at a greater or smaller distance below that diameter; which might, of course, raise the arch almost to the height of a semicircle, or flatten and depress it, so as to make it little higher than the semidiameter of one of the first circles ABC or DEF. But though they were perfectly at liberty to place these centers as they pleased, and no doubt made full use of that liberty, they seem to have been attached to certain determinate stations for them, and usually ordered them so, that the two first circles should touch each other, fig. 3, or cut each other in their centers, as in fig. 1, or in some other fixed point in the diameter, as in fig. 2; and then taking the center of the third circle, or arc BE, in the point G, where the peripheries of the two first circles cut each other, below the diameter of the arch. Now in doing this, the most ignorant workman could not avoid drawing the pointed arch DCK, fig. 1, as well as, what one would think a much more aukward form for an arch, the fig. AKF. Nothing but caprice could suggest the building an arch of that form, and yet it has been done, as we see in the churches of Elkstone and Avington, in Gloucestershire; but with such variations from this figure, as shortening or lengthening the radii of the two circles must produce; see in fig. 4 the arches ABC and DEF. The same caprice, or love of novelty, seems to have given birth to another strange form of arch, fig. 5, which is found also in the church of Elkstone; subject still to the same sort of variation, of which, no doubt, the artists availed themselves.

We may then surely conclude, that if the vanity of setting forth something new, of inventing, as they might call it, could thus lead them to execute every clumsy form they stumbled on, it is hardly possible they should have overlooked the Gothic Arch. And if this were its origin, it is probable that sort of Gothic Arch, whose centers are taken at the ends of the diameter, would be the first that was actually built.[k]

II. Another cause might, with at least equal probability, be assigned for the introduction of the Gothic or Pointed Arch into Architecture, and particularly in churches; deduced from the necessity of having all the arches in the same series of the same height, and the inaccuracies and blunders the workmen were guilty of, in setting out their plans. When either the centers of the pillars were erroneously placed, or the pillars themselves were unequal in their diameters, the intercolumniations would not be exactly equal.[l] This appears to have been frequently the case; and we meet with all the attempts to remedy the evil, which are marked in plate XXXIII. figs. 2, 3, and 4, made use of in our Cathedrals, and other Churches. Fig. 2 is, I believe, very common; and all the three may be seen together in the north transept of Winchester Cathedral.

In figure 2, the workmen merely elevated their wooden center for an arch of the diameter they wanted, above the line of the impost, till it was of the same height with the other arches, and supported it by the upright walls AB and CD.

In fig. 3, they seem to have blundered again, and made use of a wooden center still smaller than was required, and were obliged to support the arch with the oblique walls DE and FG.

In fig. 4 the center of the arch, as before, is taken above the line of the impost, and they used a greater portion of a circle than the half, for their arch.

[k] Perhaps it may not be thought improbable that they hit upon the form of Arch, plate XXXXII. fig. 6, which was so much in vogue during the thirteenth century, casually, in the same manner: they must have drawn it in the old way of constructing a regular pentagon upon a given line; fig. 7, DACBE. See Dureri Institut. Geometricarum, Lib. ii. p 55. Paris, 1535. And from this, the Arch, fig. 8, which was also much in fashion in the same age, would be easily derived.

[l] If any of the intercolumniations were too wide, they could at once substitute their oval, instead of a semicircle; and unless the error were very considerable, the difference would not be perceived.

And this last form, we may remark, though produced thus by mere accidental blunders and necessity, does appear to be the origin of, and to have given birth to, the re-entering or horse-shoe Arch, the great distinguishing feature of Moorish Architecture.

It should seem very obvious to have used an arch, but just pointed, like fig. 5, in such cases; and it may have been often done without being noticed. When the error to be corrected was small, and the centers from which the two arcs are described, were taken very near together, the point of the arch would be so obtuse, and it would differ so little from a semicircle, as to be mistaken for one:[m] the eye is easily deceived; and we seldom have opportunity, or leisure to examine the matter accurately.

If this were the mode in which the Pointed Arch was introduced, the earliest arches would be but very little pointed; and this, I know, some people, who have observed much, and taken great pains about it, affirm to be the case.

III. There is reason to believe fig. 9, plate XXXII. formed by two equal circles, cutting each other in their centers (as in fig. 1, DKCG), was held in particular veneration by Christians from very early times. It appears to have had a mysterious meaning, which I do not pretend to explain; but I believe a great deal might be pointed out, as to its influence upon the forms of all sorts of things, which were intended for sacred uses. Possibly it might have some reference to the symbolical representation of Christ, under the figure of a fish, the ΙΧΘΥΣ, which contained the initials of Ιησοῦς Χριστὸς Θεοῦ Ὑιὸς, Σωτὴρ.[n] And this is the more probable, because we are told that it was called Vesica Piscis.[o] But however this may be, and whatever ideas of sanctity might be attached to the thing itself, we may remark, that in the paintings[p] as well as sculptures of the lower ages, we find it almost constantly used to circumscribe the figure of our Saviour, wherever he is represented as judging the world, and in his glorified state; particularly over the doors of Saxon and Norman churches. Episcopal and conventual seals, and those of religious societies, and of all ecclesiastical officers, were universally of this form, and continue to be made so to this day.

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[m] I cannot help suspecting, that many of the more obtuse, and early Gothic Arches, are drawn from three centers, like fig. 6, plate XXXIII.

[n] The early Christians called themselves Pisciculi, Fishes, not only because the initials of our Saviour's names and titles in Greek, Ιησȣ͂ς Χριστὸς, Θεȣ͂ Ὑιὸς, Σωτὴρ, put together, make up ΙΧΘΥΣ; but because the Christian life took its original from the waters of baptism, by which men were regenerate, and born again into Christ's religion by water; and could not be saved, but by continuing therein; which is alluded to both by Tertullian and Optatus. The passage in Tertullian is, "Nos Pisciculi secundum ἰχθῦν nostrum Jesum Christum in aquâ nascimur; nec aliter quam in aquâ permanendo salvi sumus." Tertul. de Bapt. c. 1.—— See Bingham's Antiquities of the Christian Church, vol. I. p. 2.

At length it was used for windows, as in the front of St. Leonard's Church at Stamford, the chancel at Ramsey, &c. if I mistake not, before Pointed Arches were in fashion; and that being once done, it was a very obvious and easy step to take the half of it for the upper termination of a common window, or the arch of a door, instead of a semicircle.

IV. Another reason for using the Gothic Arch might be drawn from the arcs which the pendentives make with the walls of a square building, when such an one is covered with an octagonal tower or dome, as in the Cathedral of Placentia. It is certain those lines continued would form a Gothic Arch, of curves of an ellipsis, whose major axis is to the minor, as the diagonal to the side of a square: and that arch would, to the eye, differ little from a common Gothic Arch of two centers, taken at a quarter of the diameter, on each side. The arches under the pendentives at Placentia appear to be such, and in some measure to correspond with them; and we may observe they are the only pointed arches in that church. But perhaps it is not worth while to pursue this any further; the argument must depend upon notions of uniformity, which it would be difficult to prove these architects ever entertained.

Mr. Essex's theory is curious, and certainly deserves attention, as it comes from a man so intelligent, and well versed in the subject; and is besides in itself extremely reasonable, and is so well made out. He conceived that the Gothic Architects were induced, or rather driven, to the use of the Pointed Arch, by their practice of vaulting upon bows, and sometimes covering with such vaults spaces which were irregular; that is, not square, but longer in one dimension than the other. The sum of his theory and arguments is this:—

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[o] Dureri Institut. Geometricarum, lib. 2, p. 56. He uses it as a name well known, and familiar as that of circle, or triangle, &c. " Designa circino invariato tres piscium vesicas."

[p] See an illumination in K. Edgar's book of grants to Winchester Cathedral, engraved by Strutt in his Royal and Ecclesiastical Antiquities.

In the plain Roman Cross-vault (fornix decussata) without bows or ribs, the groins naturally find themselves; and when the two crossing vaults are equal, the groins are semi-ellipses,[q] and their plans straight lines. But in the new mode of vaulting upon bows, a great difficulty arose; for the diagonal rib, upon a square plan, ought also to be the half of an ellipsis, a curve the Gothic Architects were not acquainted with, and they therefore used, instead of it, the common oval for the diagonal bows of their vaults.[r] This figure they could construct as easily as they did a circle; but though it has, to the eye, the appearance of an ellipsis, not having its properties, it caused an irregularity in their works, and obliged them, even when the plan of the vault was perfectly square, to form pointed Arches over the circular ones.[s] In cases where the diameters of the intersecting vaults were not equal, they should have made an elliptical Arch over the circular one; but not being able to do that, and using two segments of the diagonal rib, instead of it, they could not avoid making a high pointed Arch over the round one. See plate XXXV. fig. 8.

These irregularities in the face of the arches, were not much observed while they used plain ribs, and arches with few mouldings; but when they began to adorn both with a multiplicity of mouldings and ornaments, the defect became conspicuous; and they could not remedy it any way, but by forming their arches so as to suit those which the vaults produced above them. See plate XXXIV. fig. 9 and 10.

But they sometimes used a semicircle for the diagonal rib, and when that was the case, the arches formed by the vault being made of

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[q] Plate XXXIV. fig. 1 and 2.

[r] Fig. 3, 4, and 5.

[s] Fig. 4 and 6, and Plate XXXIII. fig. 7.

segments of the same curve, must become more acutely pointed, like *d e f* in fig. 2 and 11, plate XXXIV. and fig. 8, plate XXXIII. And this being inaccurate, and troublesome in the execution, they made use of the Gothic Arch of the fourth point, as it is called, instead of it, which they found would rise to the same height, and was easily constructed, see A B C, fig. 8; and this was the first fixed rule they had for drawing a pointed Arch.

When they vaulted the naves or middle isles of churches, in which the plan of the vault was usually a double square, the diagonal rib still continued to be a semicircle, and the other arches were generated from it: see plate XXXV. fig. 8. In this case the Arch D E C on the longer side of the plan is very little pointed; that formed on the shorter side by segments of the diagonal rib, would be F G C, which not differing much from the simple Gothic Arch F g C, whose centers are taken at the ends of the diameter, they made no scruple of using that, in its stead. And this would furnish them with a second fixed rule for a Gothic Arch.

They sometimes made the crown of the vault from L to M (*i.e.* l m, or KEI) level, which raised the Arch on the shorter side to the height of the point E, and produced the high-pointed Arch F e C, which is precisely the same with No. 2 in fig. 4 of plate XXXVI. where the centers are taken in the line of the diameter produced, at the distance of one half of that diameter on the outside of the Arch.[1]

By these means their Arches became pointed; and the Pointed Arch being once admitted, was soon found useful and convenient, in all cases where Arches of different diameters were required to be of equal height, and preferable to any of the old methods, which had formerly been used, to raise them to the same level. Of this we have several examples in the east end of Canterbury Cathedral. The Arches and vaults of churches being pointed, it would be necessary, on account of uniformity, to make the doors and windows within them of the same figure (plate XXXIV. fig. 8 and 11); it became the reigning and established form; the semicircular Arch was seldom used, and was at length entirely laid aside.

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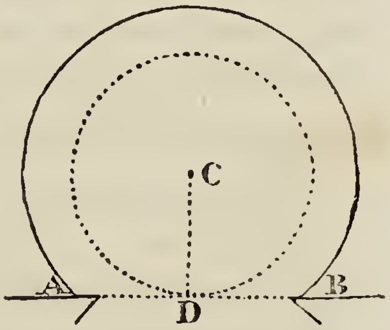
[1] This would give a third rule for drawing a Gothic Arch.

Every one of these opinions concerning the introduction of the Gothic Arch may be defended. They all furnish reasonable inducements for building them; and each, in its turn, may have been the actual cause of people's doing it. They might all, no doubt, contribute to establish the fashion of using the Gothic Arch, though it may be impossible to ascertain which of them first led to it, or to determine which did the most towards bringing it into vogue; and in all likelihood other motives might concur, which we are not aware of. Such conjectures as these are not absurd or trifling, however frivolous the disputes may be which give rise to them; only let us keep in mind, that they are but conjectures, not discoveries. It is only when they pretend to certainty that they are objectionable: they may be acute, and sensible, and full of matter, valuable in itself, and still more so, if it tends to put people upon the right mode of research, in order to obtain further knowledge of the principles by which the Gothic Architects were guided.

Note 3, p. 296. (C.)

The semicircular Arch can have no variety; it is always a semicircle.

The Moorish, or re-entering Arch, is limited one way; for when the radius of the describing circle is shortened till it is no longer than the height CD, of the center C above the line of the the impost, the points A and B must meet, and it becomes a circle, and not an Arch. Upwards it might be extended without limit, and it would approach constantly to a semicircle, which it could never in reality attain: but the radius would soon become so great, that the height C D of the center above the line of the impost would bear but a very small proportion to it, and the eye could not then distinguish the arch from a semicircle.



The variations of the elliptic Arch, or semi-ellipsis, would be bounded by the axis one way, and by a semicirle the other.

The Gothic Arch (and I mean to take it now in its simplest form, when described from two centers only) is capable of being varied in two different modes.

I. By retaining the same centers, and varying the length of the radius.

II. By retaining the diameter or basis of the Arch, and varying the length of the radius, by moving the place of the centers, upon that diameter; produced both ways, if necessary.

In the first mode upwards (by lengthening the radius), the Arch will for ever approach to a semicircle, which in fact it can never attain; and below, it will be more and more acute, till there is no Arch at all, by the radius being shortened, till the two describing circles no longer cut, but only touch each other. See plate XXXV. fig. 1.

In the second mode the Arches will be all higher than a semicircle (upon the same diameter), and may be raised in infinitum, by continually lengthening the radius, but still taking the centers upon the diameter of the arch, produced both ways. See plate XXXVI. fig. 5.

But Architecture is not concerned with infinites; its forms, from the nature of the thing, must be limited; and, in the subject we are considering, this limitation may be effected in several different ways: that is, certain stations may be fixed on for the centers, according to some rule or law, which would produce Arches, sufficiently different from each other, to be distinguished by different names, and might moreover be thought to have some kind of regularity.

For instance: first, by dividing the diameter into a certain number of equal parts, and taking the points of division for centers, as 3, 4, 5, &c. the Arches, No. 1, 2, 3, in fig. 2, plate XXXVI. would be formed;[t] and by continuing such divisions upon the diameter, produced both ways, we should have the series, No. 1, 2, 3, fig. 4, where the centres are taken at a quarter, a half (two quarters), and the whole length (four quarters) of the diameter on the outside of the Arch.[u]

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[t] In these Arches the radius of the describing circle is to the diameter of the Arch, in No. 1 as 2 : 3, in No. 2 as 3 : 4, in No. 3 as 5 : 6, &c.

[u] In these Arches the radius of the describing circle is to the diameter of the Arch, in No. 1 as 5 : 4, in No. 2 as 6 : 4 (*i. e.* 3 : 2), in No. 3 as 8 : 4 (*i. e.* 2 : 1).

In fig. 3, plate XXXVI. the centers are taken at the extremities of the diameter, so that one arc passes through the center, from which the other is described; and the Arch so drawn seems to have been generally the most esteemed of all.[x]

II. Another series of Arches may be found, all of which might also claim a sort of regularity, by dividing a right line drawn perpendicular to the diameter of the Arch at the middle point, into a certain number of equal parts, and drawing Arches to all the points of division, as in fig. 5, plate XXXVI. where one fourth of the diameter is taken for the module, and applied to the vertical line DK. A semicircular Arch would, of course, rise to the height of two of those parts, the others to 3, 4, 5, 6, &c. And that at 4 being exactly as high as it is wide, would, we may suppose, have a kind of preference on that account.[y] And possibly it was for the same kind of reason that the Arch in the former series, whose centers are taken at the extremities of the diameter, was a favourite: it is a sort of middle station for the centers, between those taken within, and those on the outside of the Arch; and it might fairly be called the Mean-Pointed Arch. But one would be cautious of imposing new names, there is so much difficulty in getting rid of them, if they are found afterwards to be inconvenient.

III. A third series of Arches, still different, might be found by determining them according to the number of degrees, which each of the arcs that form them should contain, 10°, 20°, 30°, 40°, 50°, 60°, &c. as in fig. 6, plate XXXVI. where that of 60° would, as before, be the mean Arch.[z]

The other kinds of Gothic Arches, described from 3, 4, or any greater number of centers, are more complex, and consequently admit of more and different modes of variation.

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[x] Several reasons might be given for this preference, in particular cases; more especially as to the form of windows, but they cannot be applied generally.

[y] It is precisely the same Arch with that at No. 1 in the last series, fig. 4.

[z] It may be observed that, in all these Arches, their altitude is always to their diameter, as the sine to double the versed sine of one of the arcs.

But what has been said of these may suffice for the present, and we will go on to point out, more particularly, the prodigious variety which these properties of the Gothic Arch, introduced into the architecture in which it was used; a variety to which we find nothing similar in the antique, or what is, by way of eminence, called regular Architecture.

The semicircular Arch was the only one used in that architecture. If we do meet with some few of another form, they are very extraordinary, and appear not to be of a piece with the rest; not of the genius of that style.[a]

Now in the archivault of a semicircular Arch, all the mouldings, however diversified and rich, will still be but concentric semicircles, all exactly similar, in form, to the Arch itself, which they are intended to ornament. But in Gothic Arches it is not so. In them every moulding on the face of the Arch (or archivault), is concentric with its Arch, but it is not similar to it; no two can be alike; they are each, respectively, composed of different portions of a circle, and each is a different Arch. Fig. 9, plate XXXVI. for instance, contains in one Gothic Arch (a door, suppose), besides many others, all the four different forms exemplified in fig. 2 and 3; and fig. 10 contains, in one Arch, that of fig. 3; and all those in fig. 4, No. 1, 2, and 3.

The eye feels the pleasure it is naturally formed to receive from this continued diversity, though very few, perhaps scarcely any, of the spectators are, at the time, at all conscious of the cause.

And this continued diversity it is, we may further remark, which gives to Gothic Architecture that immense scope and compass, which no other known style of Architecture can pretend to: qualities of infinitely more importance than the mere power of constructing Arches of different forms. The Gothic Architects have not availed themselves of that power, so much as might have been expected.

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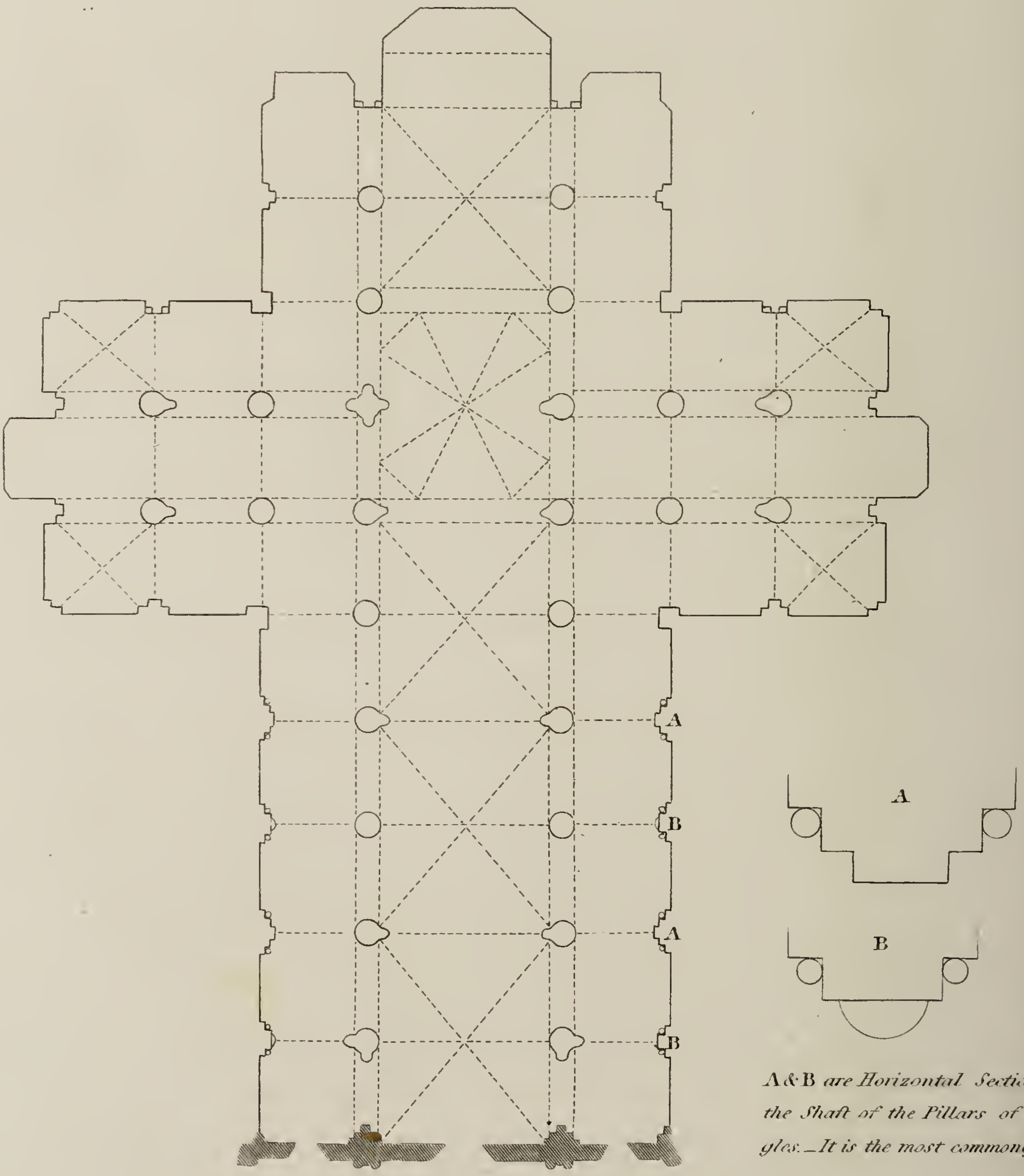
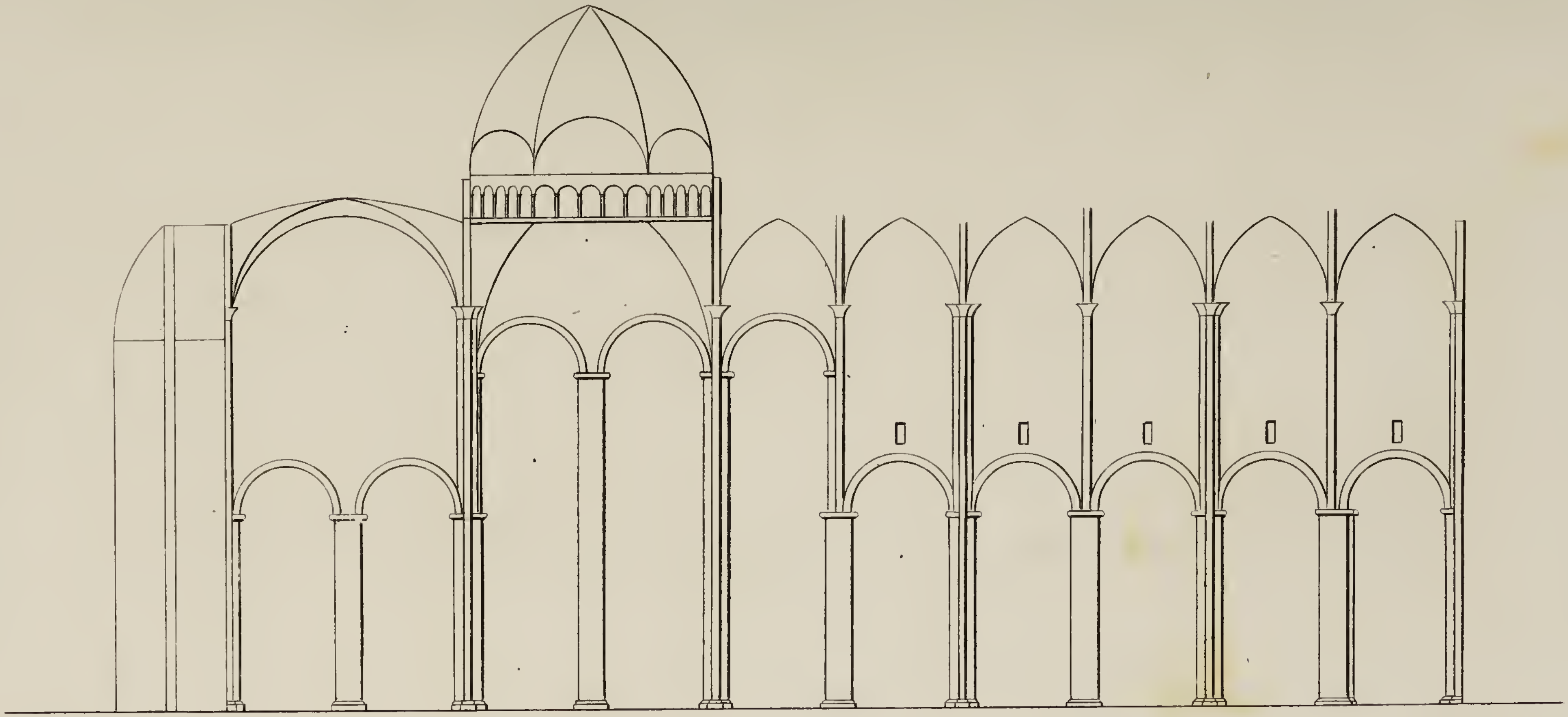
[a] I would wish here to consider all such Arches as fig. 7 and 8, in plate XXXVI. where the upright lines of the impost AB and CD do not touch, but cut the curve of the Arch; as incomplete and truncated Arches,

Cathedral Church at Placentia.



A & B are Horizontal Sections of the Shaft of the Pillars of the Angles. _It is the most commonly used.

Js Basire sculpt.



Cathedral at Placentia.

Section thro' the middle of the Church.

J. Basire sc

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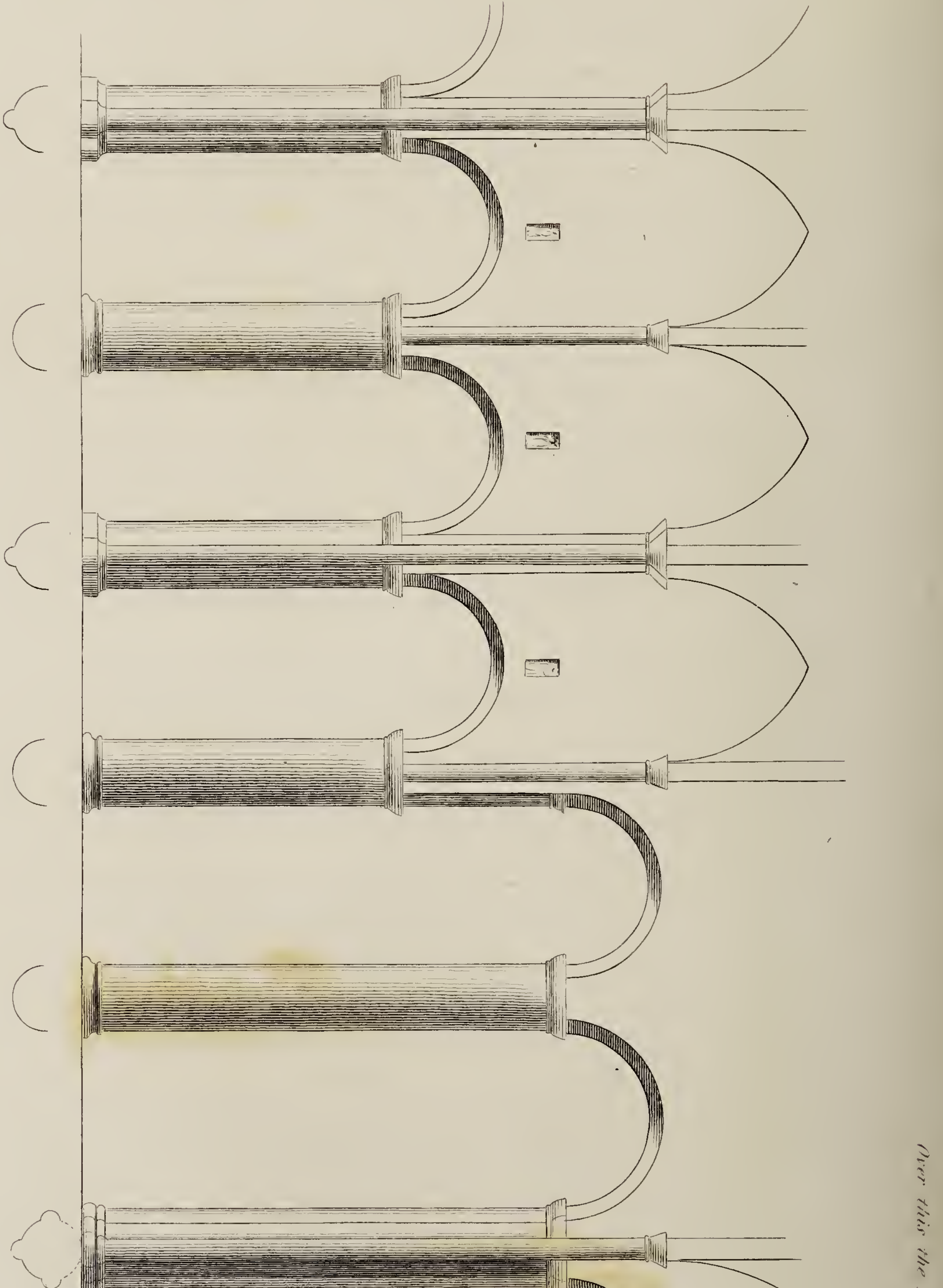
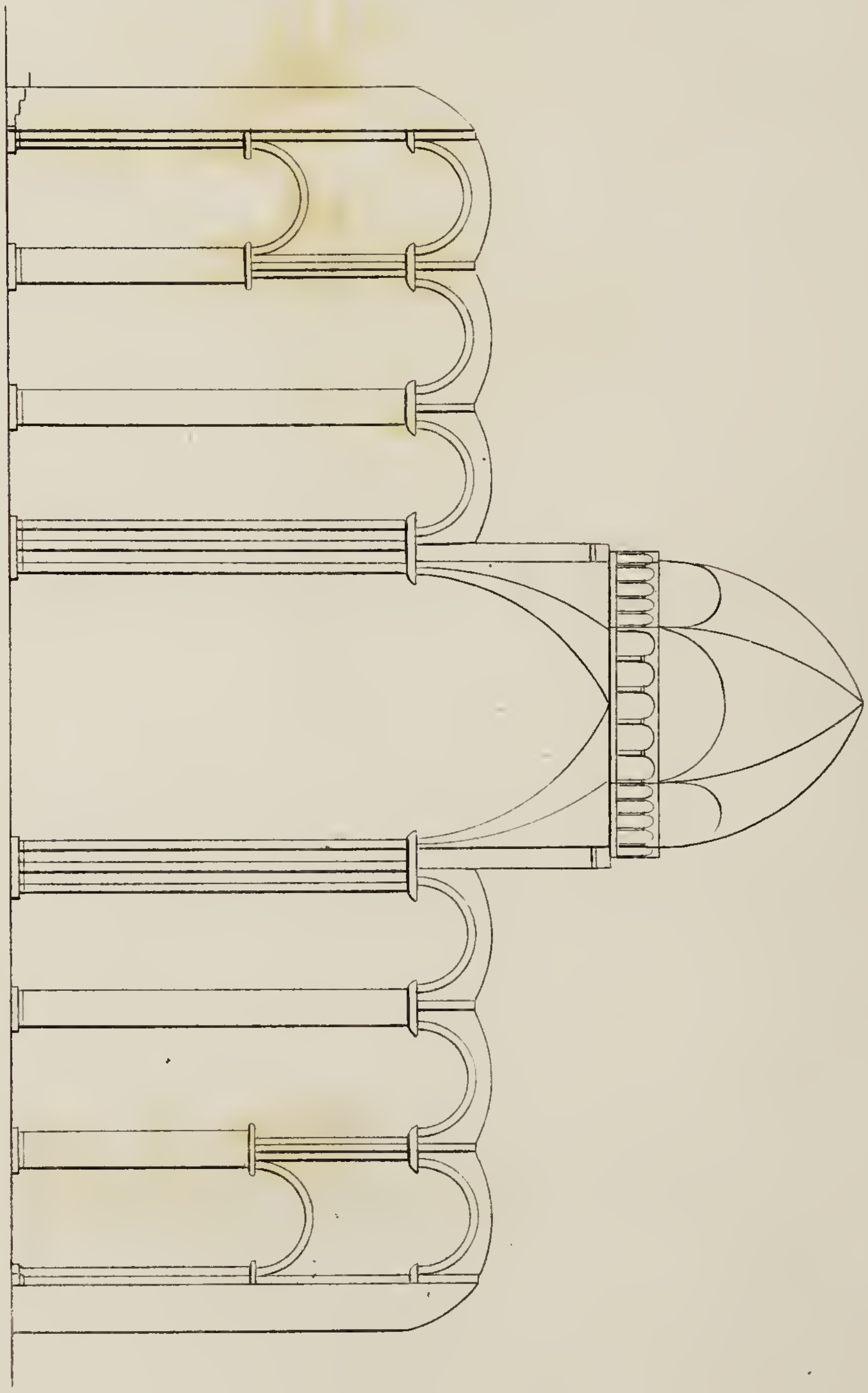


Part of the inside of the N. Side of the Nave of Cathedral at Placentia.

Js. Basire sculp.



Cathedral at Placentia.

Section thro' the middle of the Cross.

J.s Basire sculp.t

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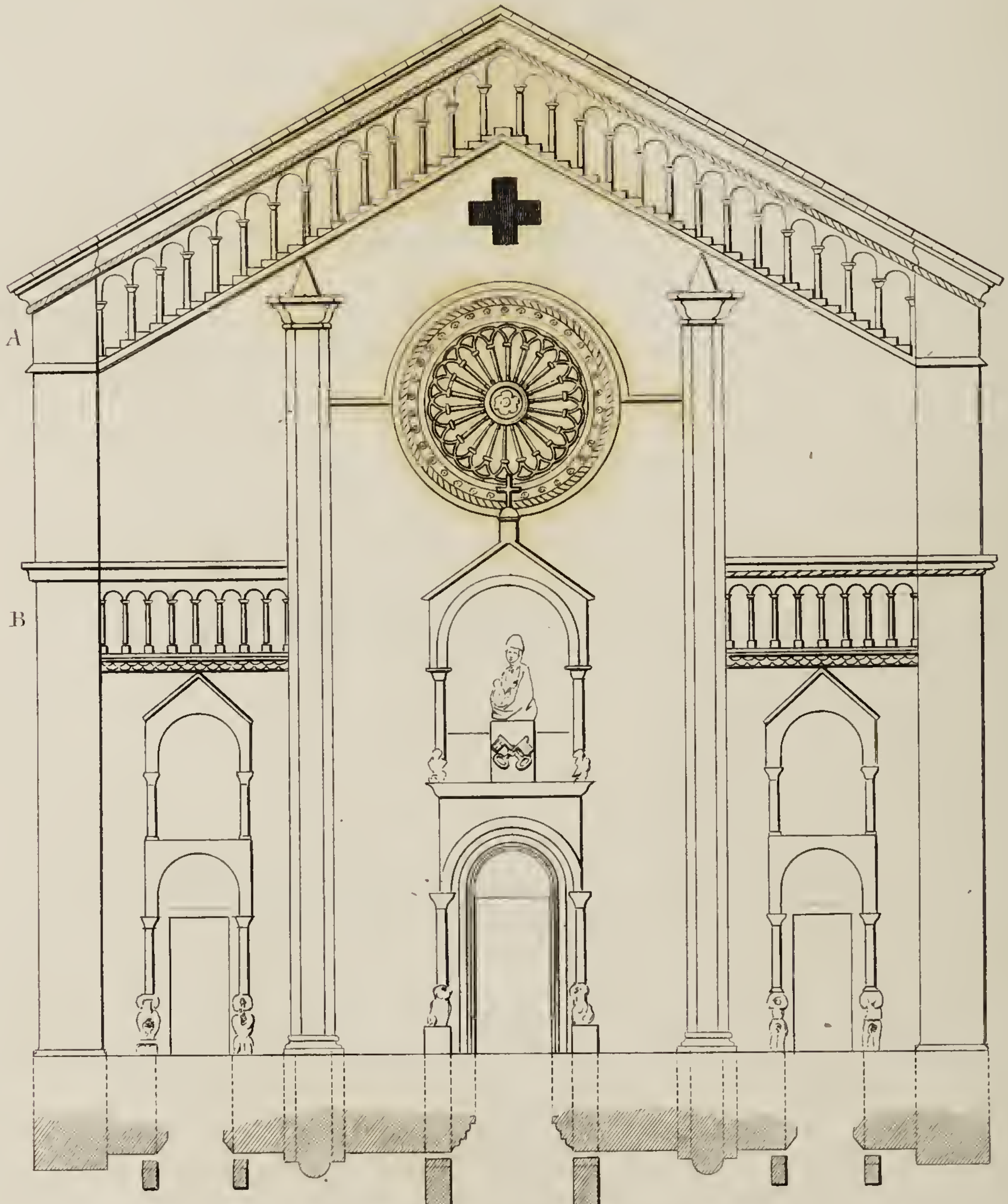
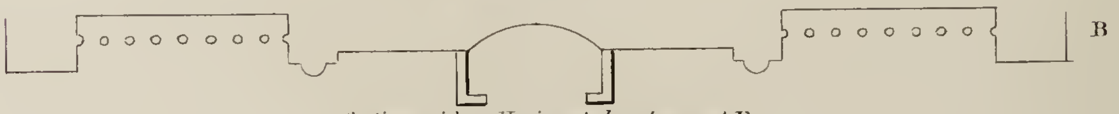
Cathedral Church at Placentia.

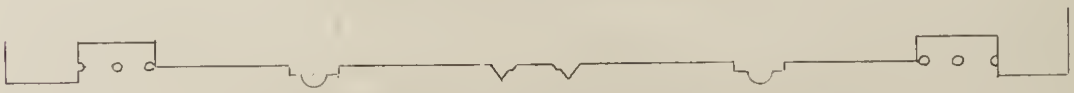
West Front.



Section with the Ground Plane



Section with a Horizontal plane at B.

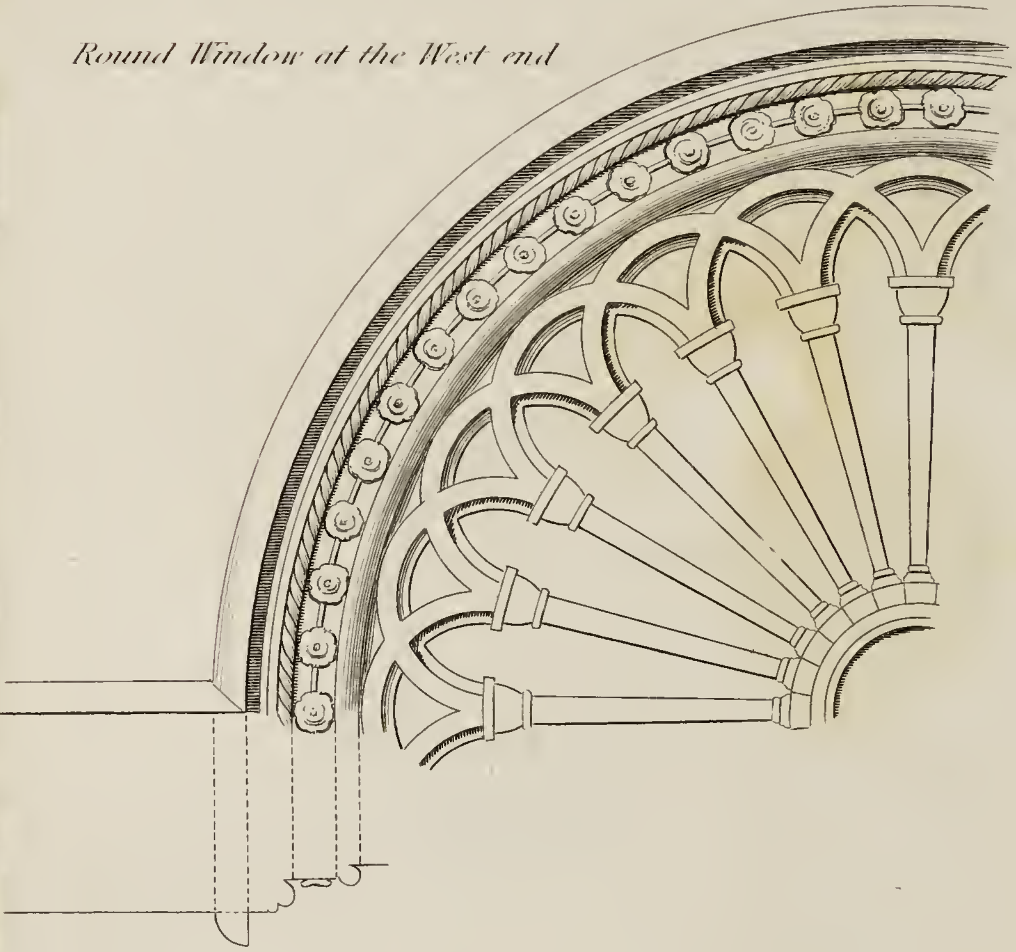


Section of the Front with a Horizontal plane at A.

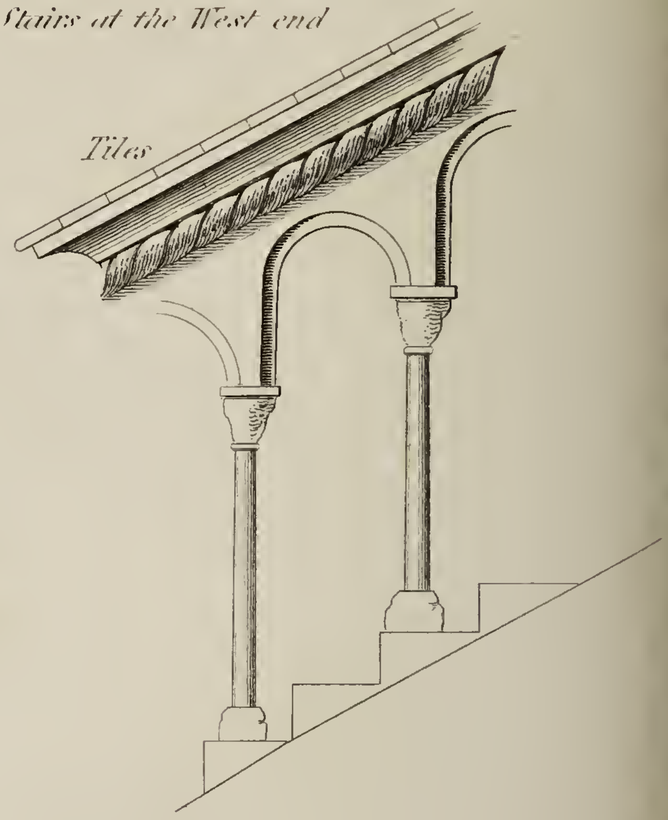
J. Basire sculpt

Cathedral at Placentia

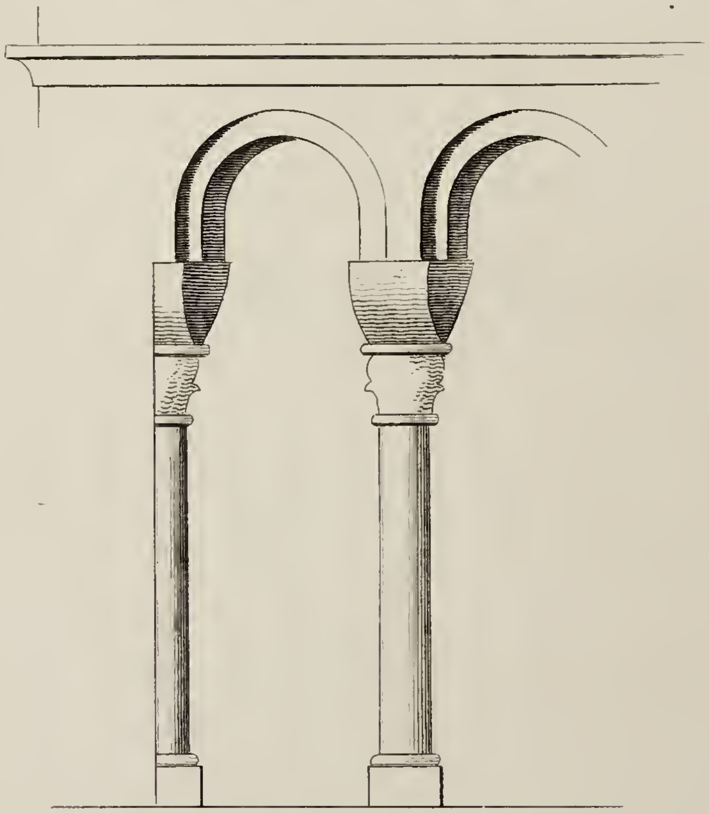
Round Window at the West end



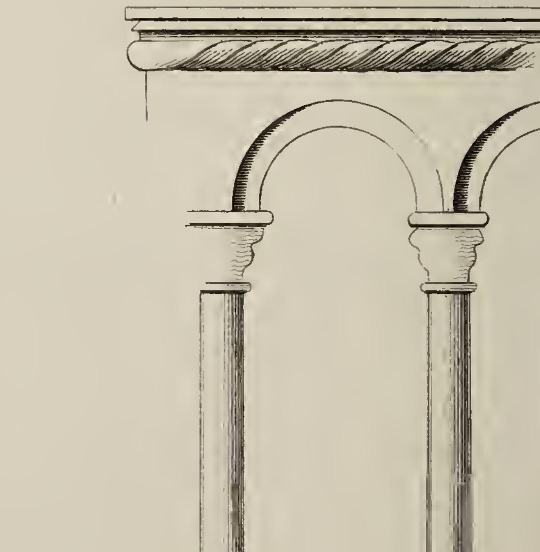
Stairs at the West end



Gallery South of the Window



Gallery North of the Window



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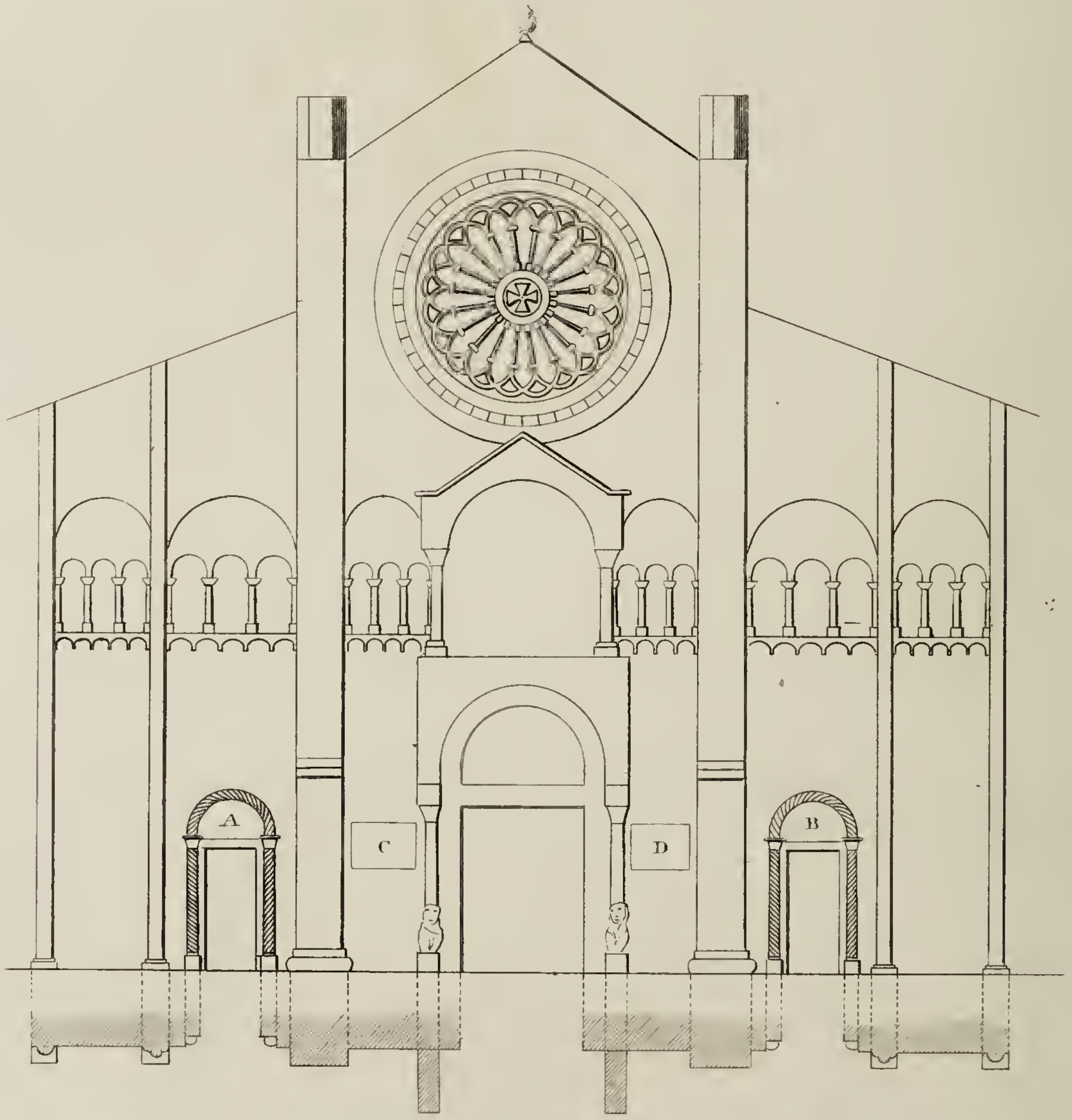
Cathedral of Modena

the West end.

Copied from a drawing Sketched in haste.



A,B,C,&D *are Baſso-relievos.*

J. Basire sculp.t

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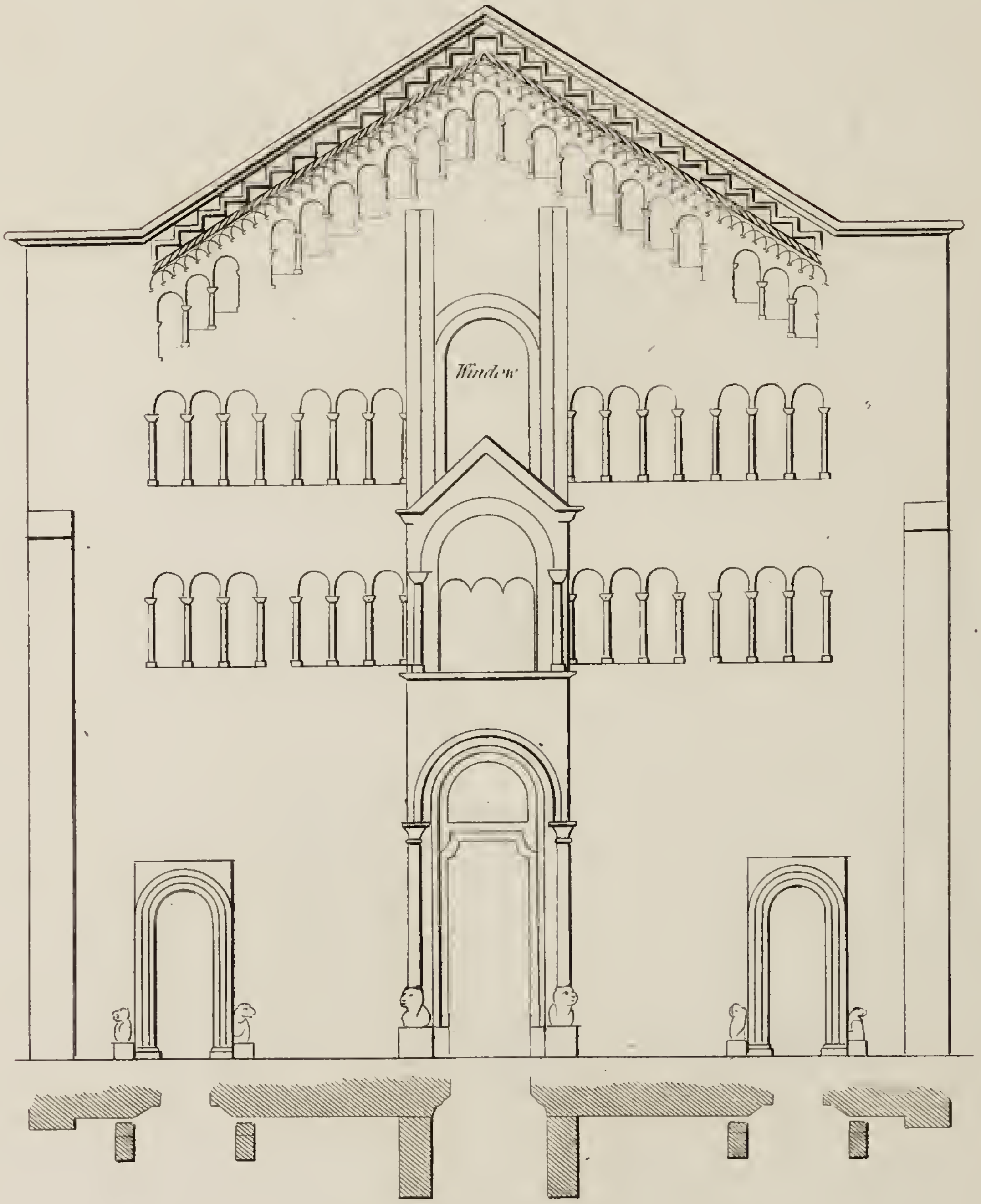
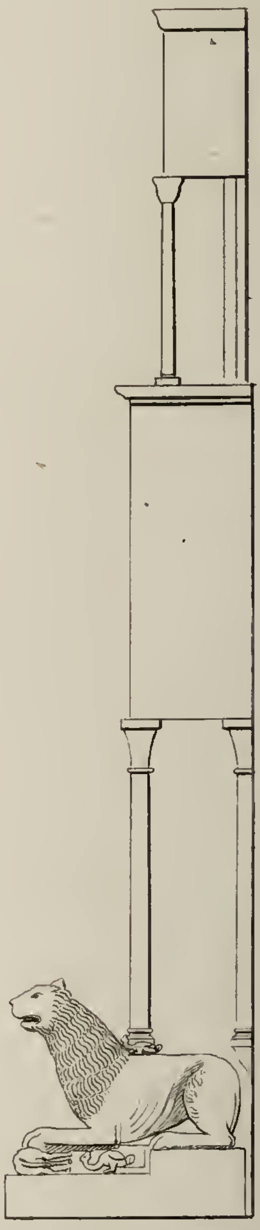
Front of the Cathedral at Parma





Great Door sidewise

Profile of the Portico.

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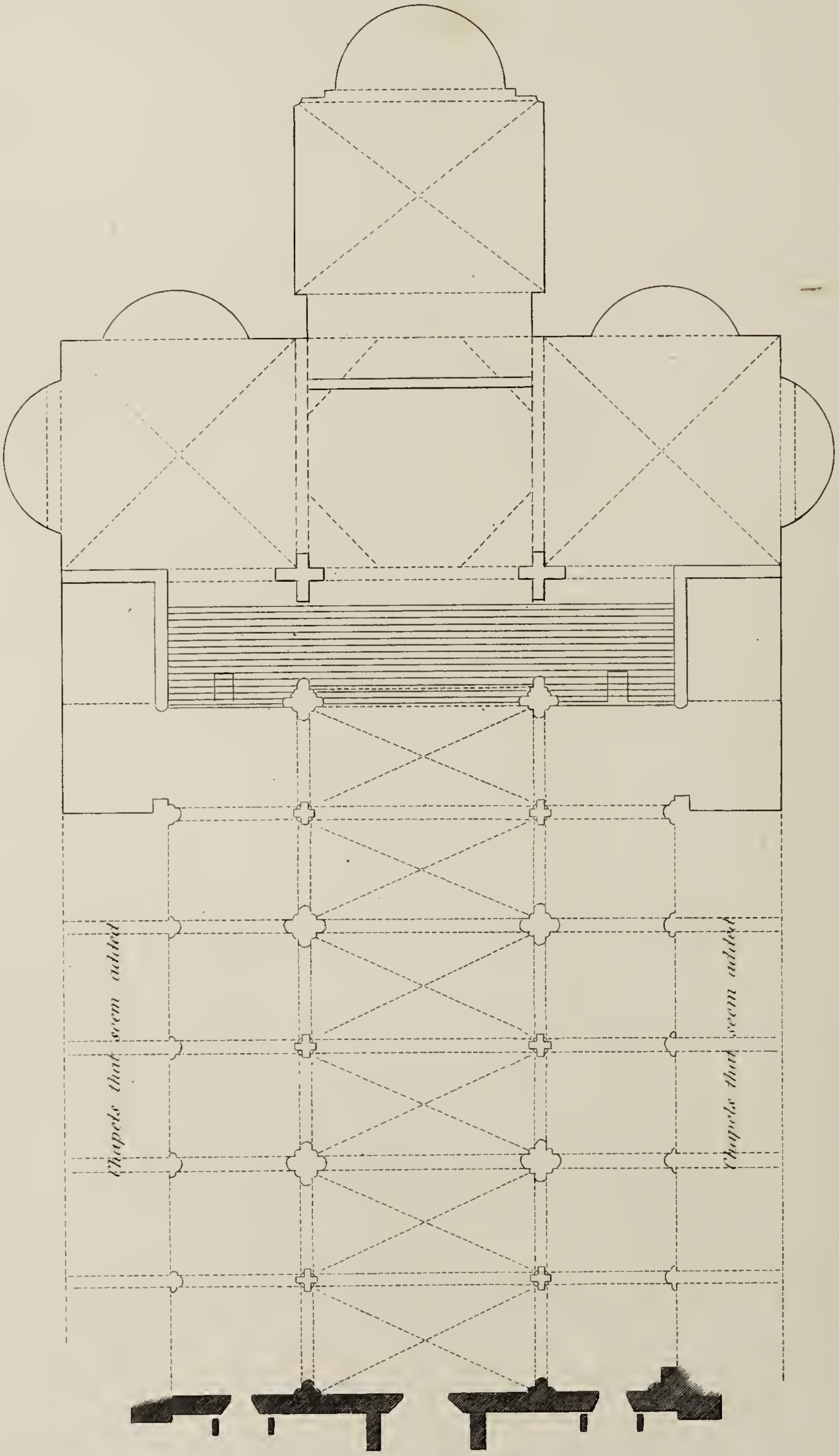
Cathedral at Parma



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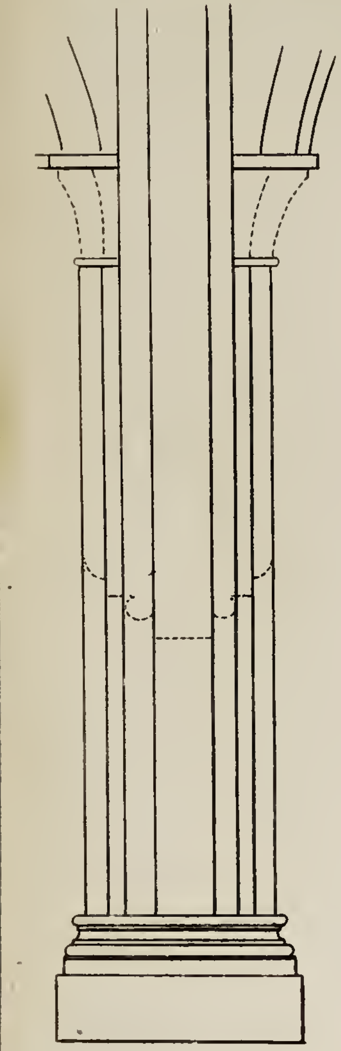
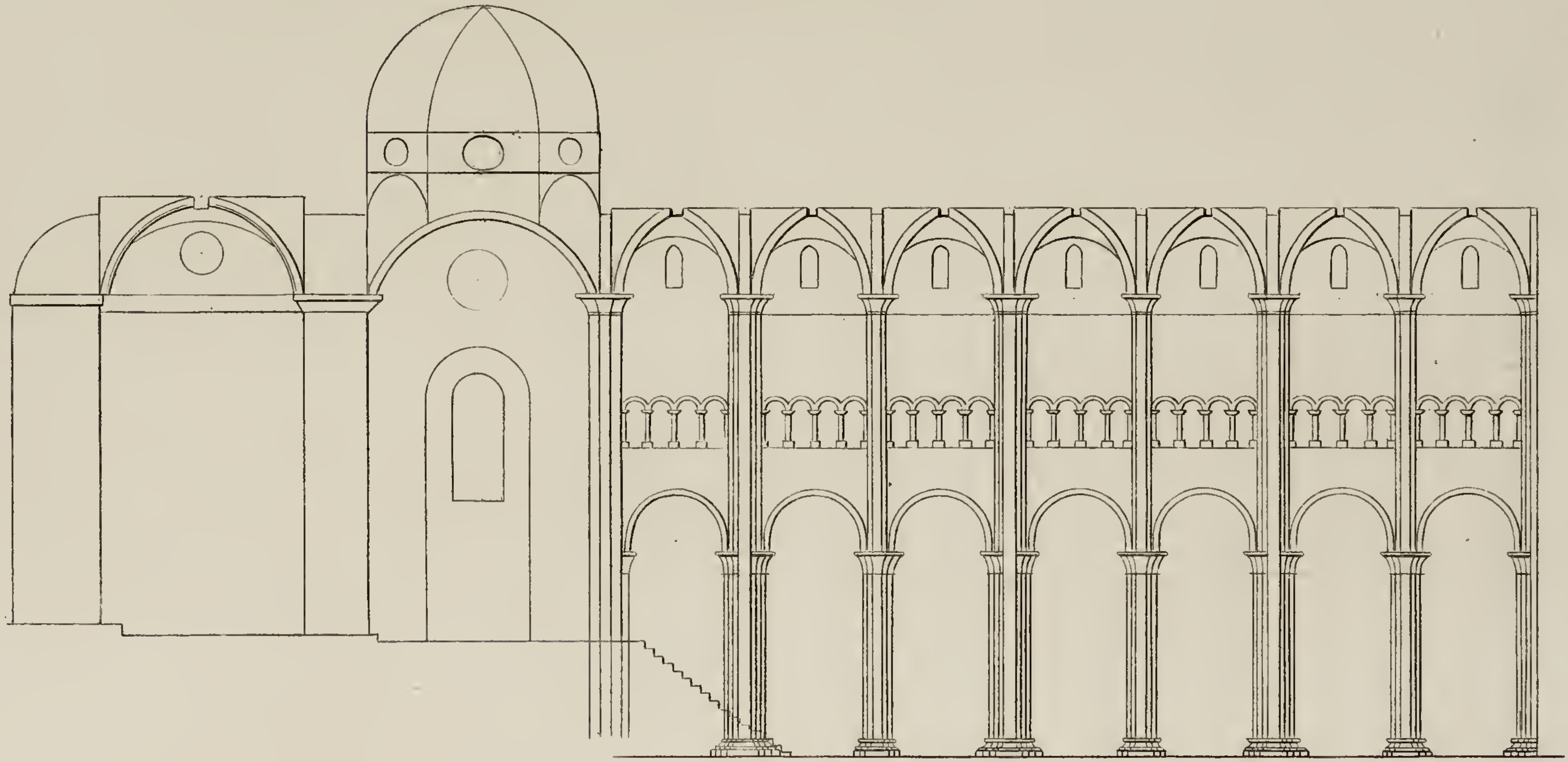
Cathedral at Parma.

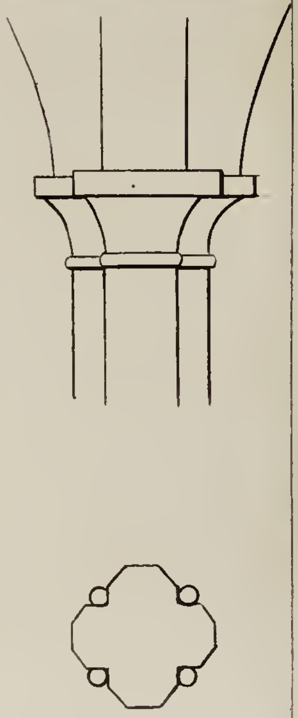
Large Pillar of the Nave

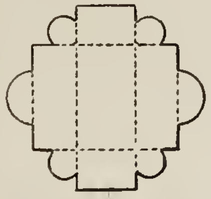


Section thro' the middle of the Nave.

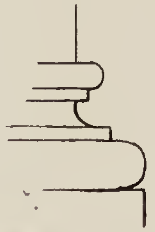


Small Pillar of the Nave



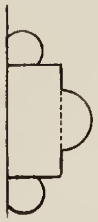


Larger Pillar of the Nave

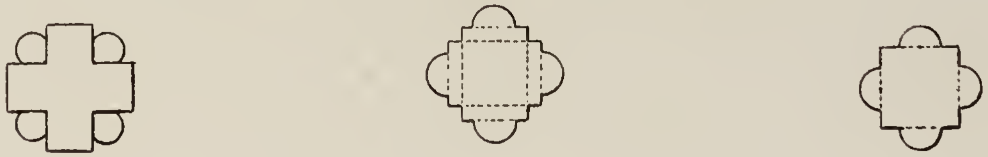


Common Base

Pattern of a large Pillar at the West end

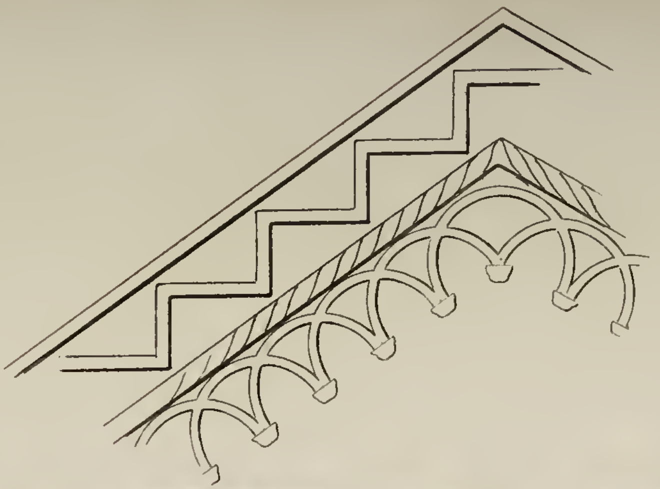


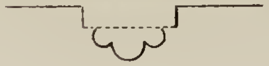
The Smaller Pillars of the Nave



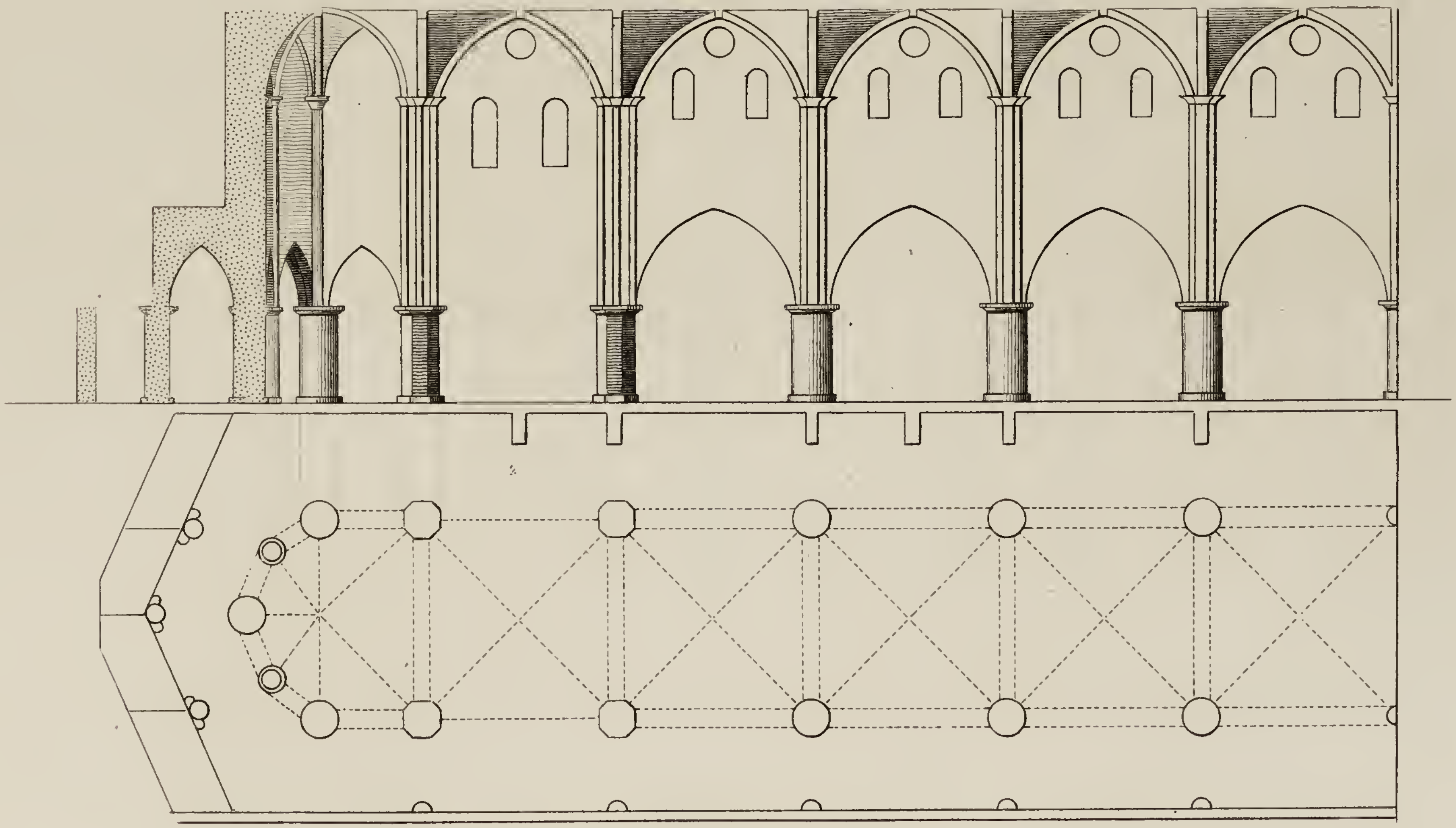
Js Basire sculp

Cathedral at Parma





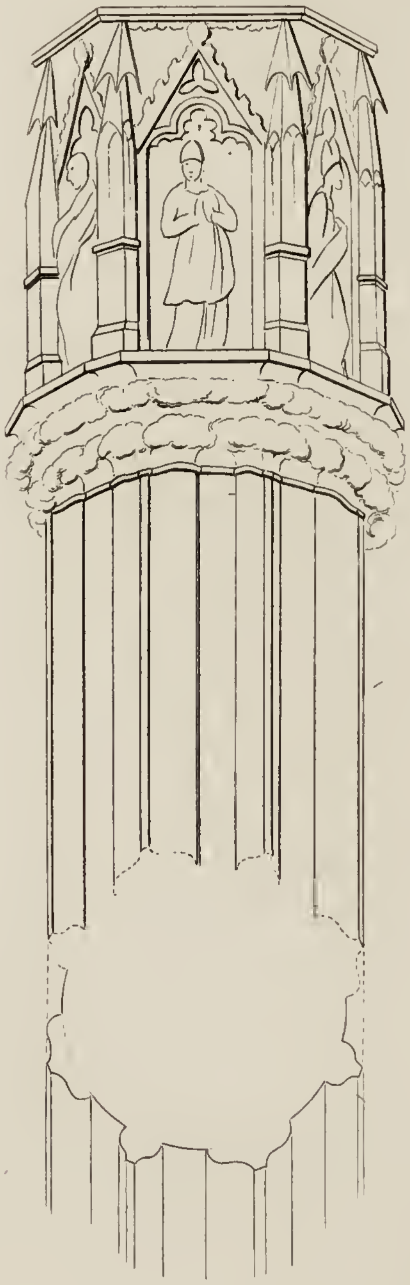
Section of the upper Pillars

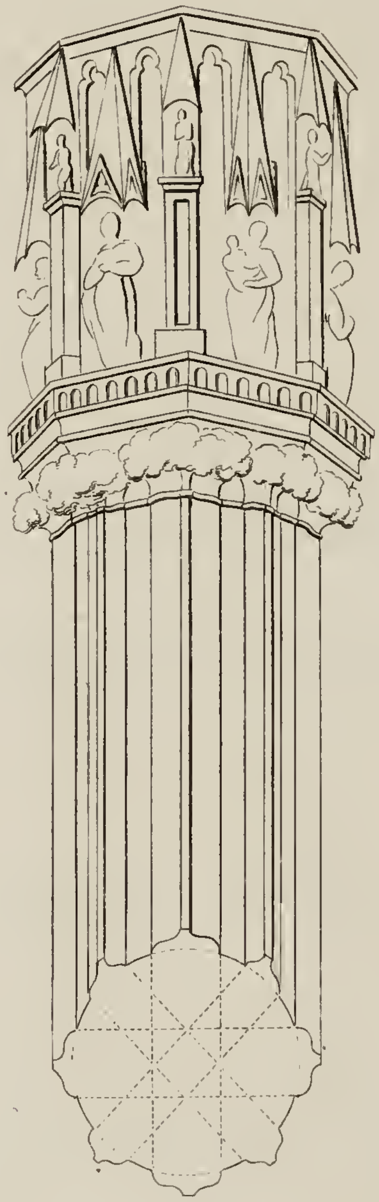


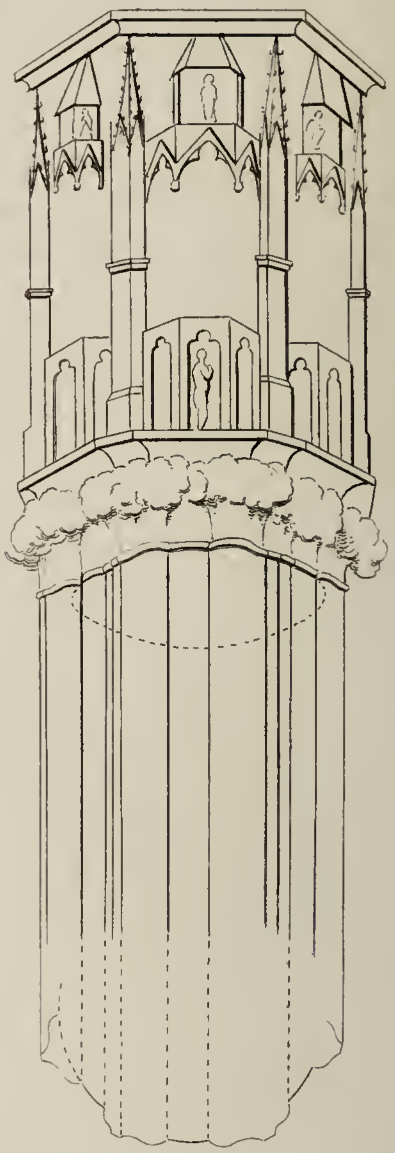
Church of St. Francis at Placentia

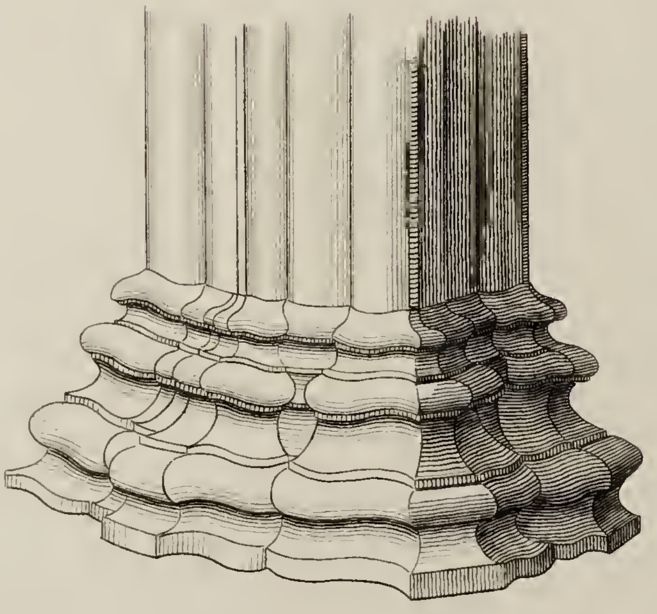
J. Basire sculp.

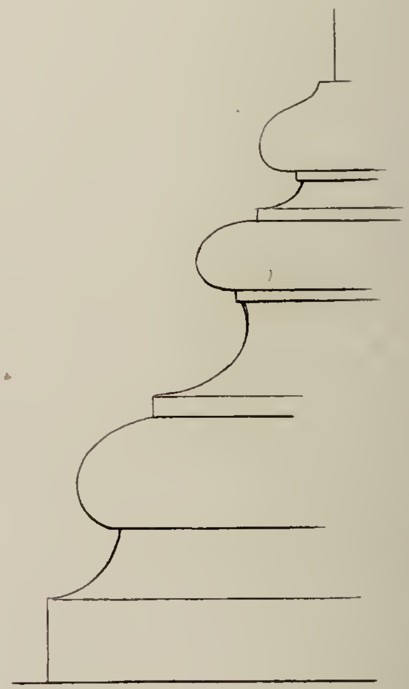
Plate XXX.











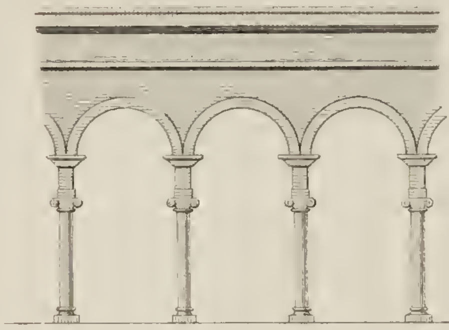
F. Basire sculp.t

Antique

Old Gothic of the Middle Ages

Gothic

Fig. 1.



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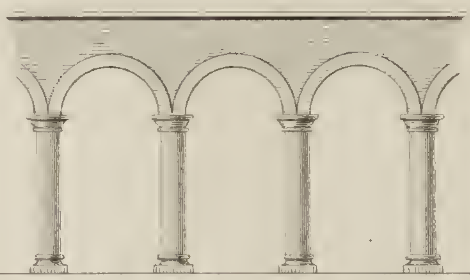

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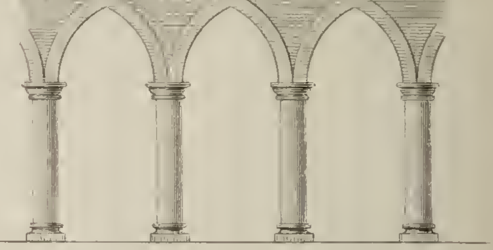

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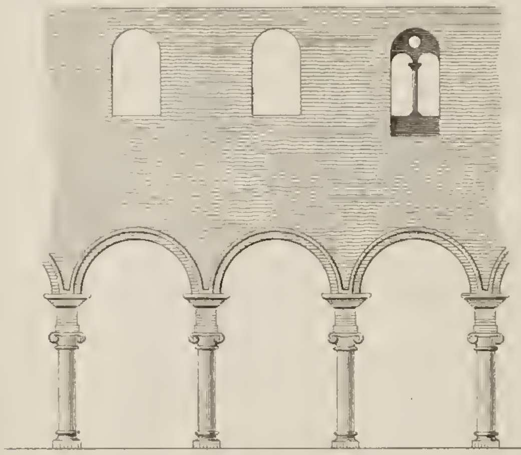

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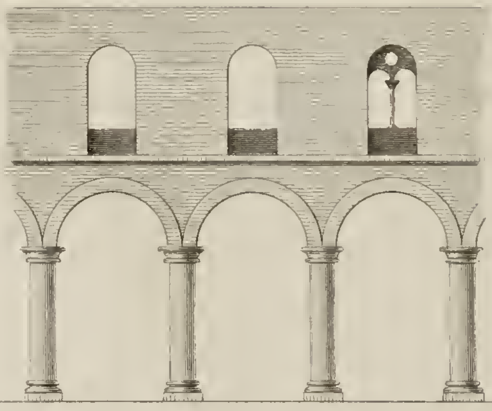

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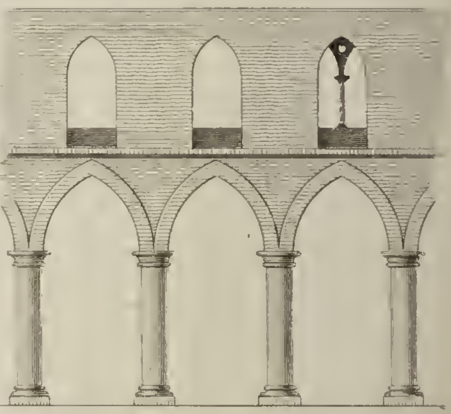

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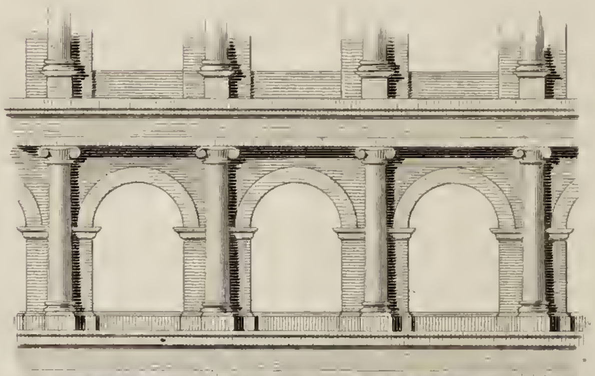

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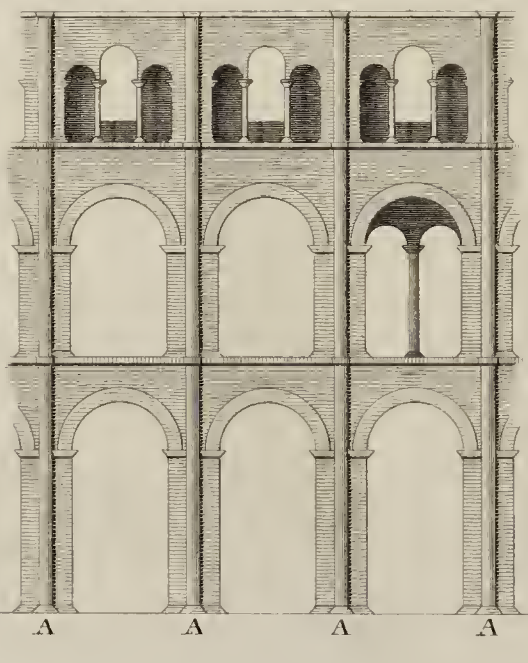

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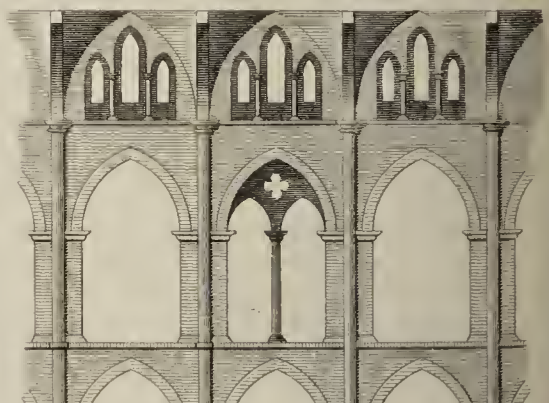

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Fig. 1.

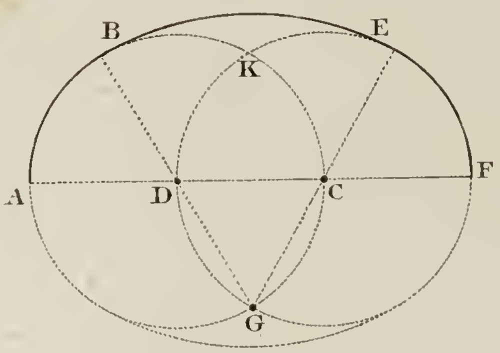


Fig. 3.

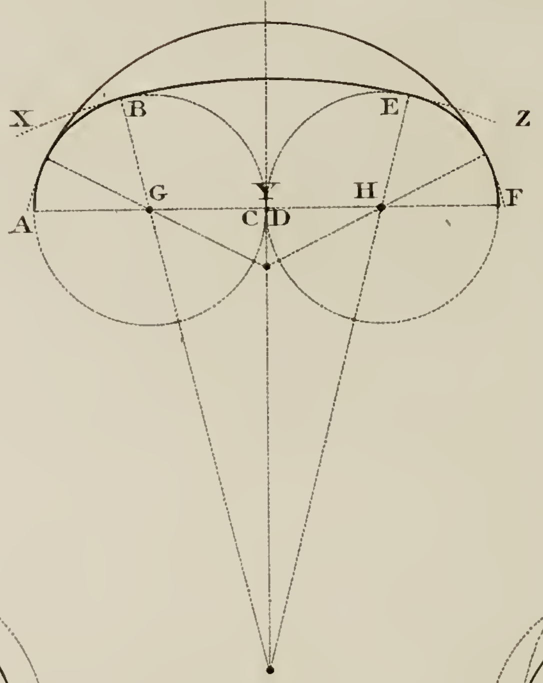


Fig. 2.

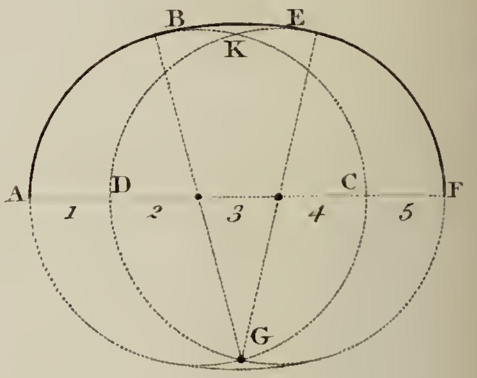


Fig. 5.

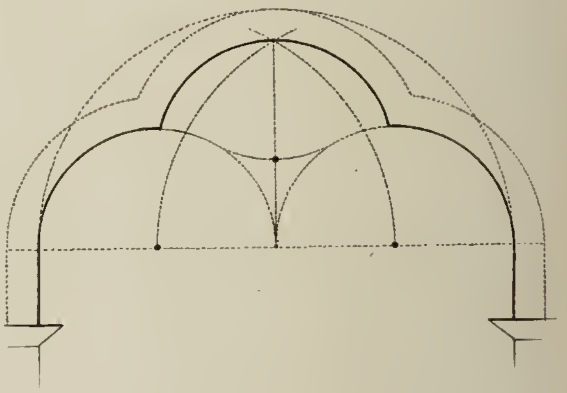


Fig. 4.

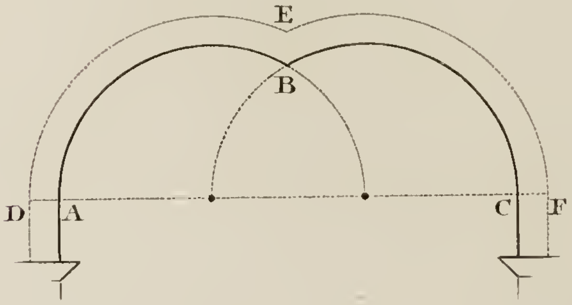


Fig 7.

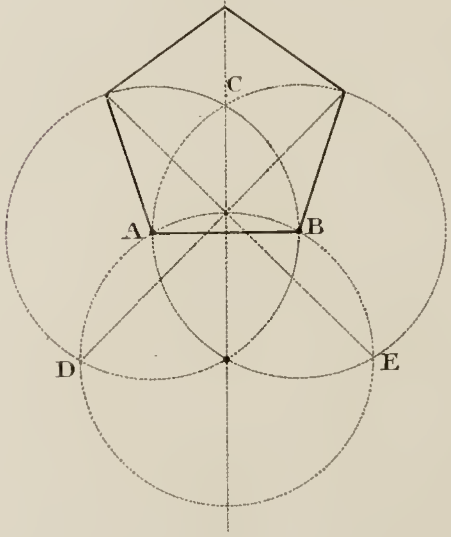


Fig. 6.

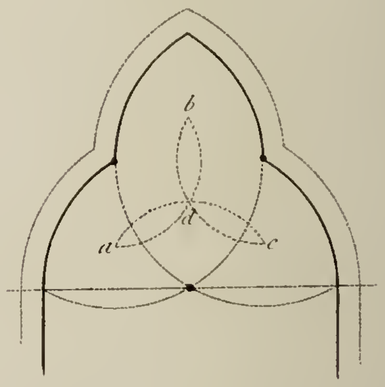


Fig. 10.

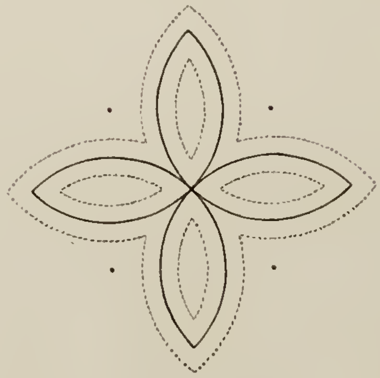


Fig. 9.

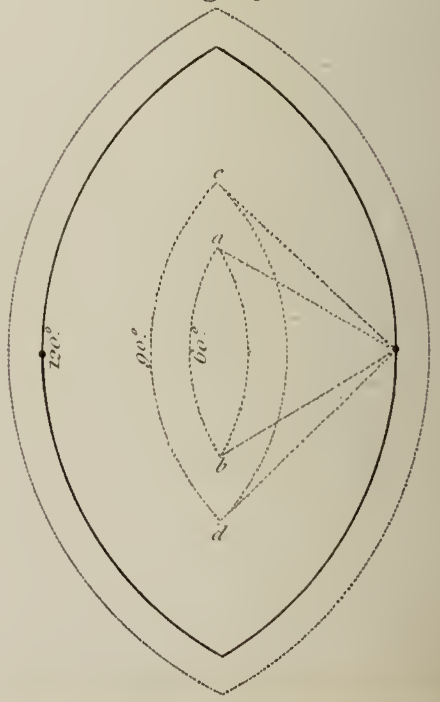
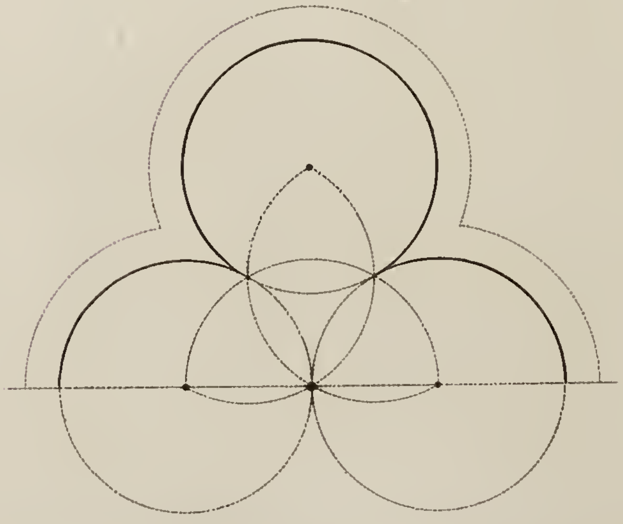


Fig. 8.



J. Basire sculp.

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Though so many of exquisite beauty must have presented themselves, only a few established forms were, I believe, commonly used for the Arch itself; and by those all the mouldings and ornaments belonging to them were in every case regulated. What it was that determined the architects in their choice of those particular forms, certainly deserves further consideration.[b]

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[b] See what Mr. Essex has advanced on this subject in note B, the latter part of it.

EXPLANATION OF THE PLATES.

PLATES XIX. XX. XXI. XXII. XXIII. and XXIV. contain the Plan, Sections, and the Front of the Cathedral of Placentia; together with some parts of it upon a larger scale.

Plate XXV. the Front of the Cathedral of Modena.

Plates XXVI. XXVII. and XXVIII. the Front, Plan, and Sections of the Cathedral of Parma.

Plate XXIX. the Church of St. Francis at Placentia: a Plan and Section.

Plate XXX. Pillars of the Cathedral of Milan—Sketches of their Capitals, Shaft, and Base; with the Tabernacles and Figures, over them.

Plate XXXI. Mr. Essex's comparison of the antique Roman Architecture, Architecture of the Middle Ages, and Gothic Architecture. Fig. 1 is taken from the Church of St. Constantia at Rome; fig. 2, from a small Church of the Middle Ages, without Windows in the Nave. Fig. 3, a Gothic Church without any Windows in the Nave. Fig. 4, the Church of S. Stefano Rotundo at Rome. Fig. 5, a Church of the Middle Ages. Fig. 6, a Gothic Church. Fig. 7, the Outside of one of the Amphitheatres or Theatres of the Ancients. Fig. 8, the Inside of a Norman Cathedral. Fig. 9, the Inside of a Gothic Cathedral, or large Church.

Plate XXXII. Figures the old Architects probably must have drawn, which might possibly suggest to them the Pointed Arch, and various other forms of Gothic Arches.

Fig. 1. To construct the common Oval Arch, let AF be the diameter, cut into

three equal parts in D and C. With the centers D and C, and the radius D C, describe the two equal circles ABCG and DEFG, and from the point G, where the circumferences of the two circles cut each other below, as a center, and with the radius GB or GE (passing through the center D or C to the circumference of the circle) draw the Arc BF, which completes the Oval Arch ABEF.

Fig. 2, the same kind of Arch, when the centers of the two first circles are nearer to each other than one third of the diameter.

Fig. 3, the same kind of Arch, when the two first circles do not cut, but only touch each other.

Fig. 4, an Arch of the same form with ABKEF, part of fig. 1, of which we have examples in the Churches of Elkstone and Avington, in Gloucestershire.

Fig. 5, an Arch, of which we have also an example in Elkstone Church.

Fig. 6, an Arch much used in the thirteenth century. Outwards this Arch is (that is, the varieties of it are) unlimited; but it would be limited within by the three circles, of which it is composed, being diminished, till they do not cut, but only touch each other, and so no longer form an Arch, but the three figures, a d, b d, and c d, which appear to have been called Vesicæ Viscium, touching each other in the point d.

Fig. 7, the old method of constructing a Regular Pentagon; in doing which they must necessarily have drawn the figure of this Arch DACBE.

Fig. 8, another Arch, also much used in the thirteenth century, which might obviously be derived from the same figure DACBE, fig. 7, or from the Arch, fig. 6. This Arch is very commonly mistaken for the Quatrefoil Arch, from which it differs essentially. In the Quatrefoil Arch the height is, in all its varieties, exactly equal to half its diameter: in this Arch the height is, in all cases, greater than half its diameter.

Fig. 9, is the Mysterious Figure mentioned in page 313, which, I apprehend, was called Vesica Piscis. I do not recollect to have ever seen it made wider in proportion to its height, than it is drawn here, with the center of one of the two circles that form it taken in the circumference of the other, and the two Arcs each of 120°. But it might be extended outwards without limit, and the figure would constantly approach to a circle: within, the variations must be limited by the two circles being diminished till they no longer cut, but only touch each other, and the figure vanishes. But several intermediate fixed forms may be found, some of which have been actually used in Architecture: as by taking Arcs of only 60° each (half the number of degrees) the figure *a b* will be produced, which is the case when three of these figures are formed together by three circles cutting each other in the same point, as *a d*, *b d*, and *c d*, in fig. 6,

Fig. 1.

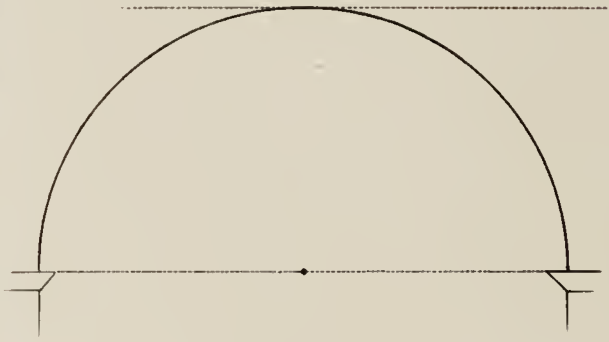


Fig. 2.

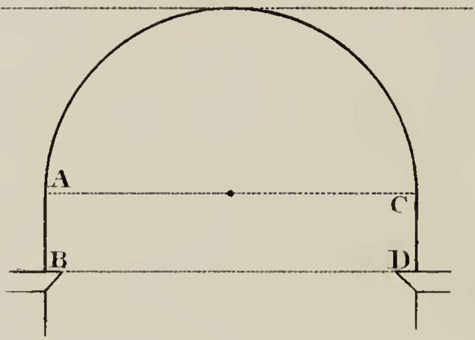


Fig. 3.

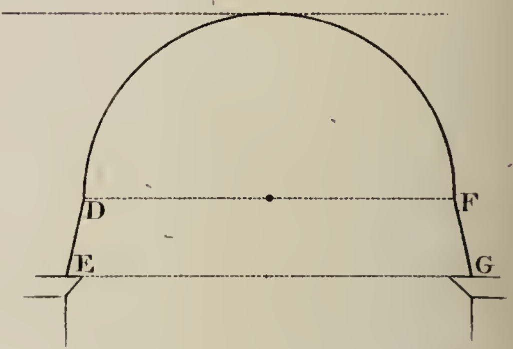


Fig. 4.

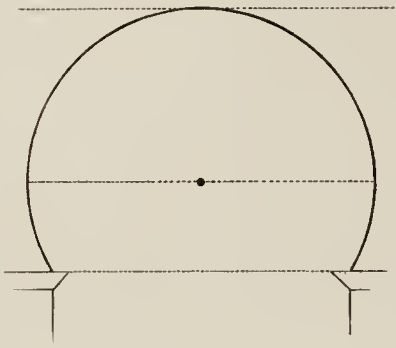


Fig. 5.

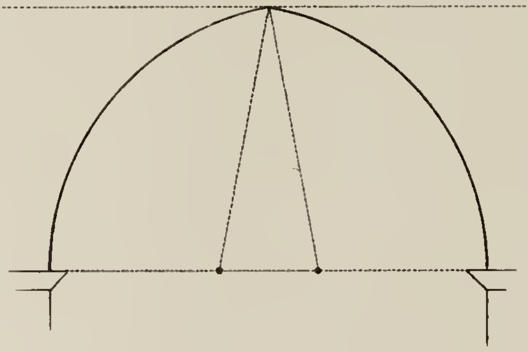


Fig. 6.

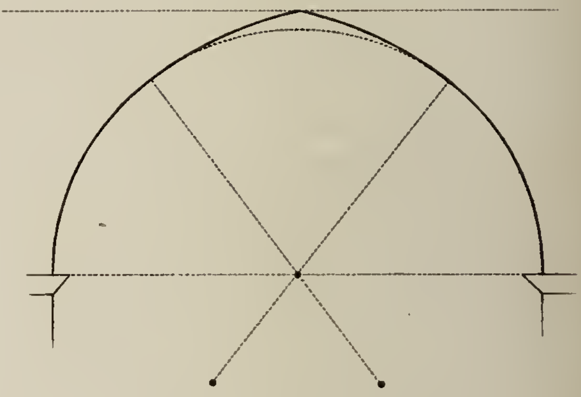


Fig. 8.

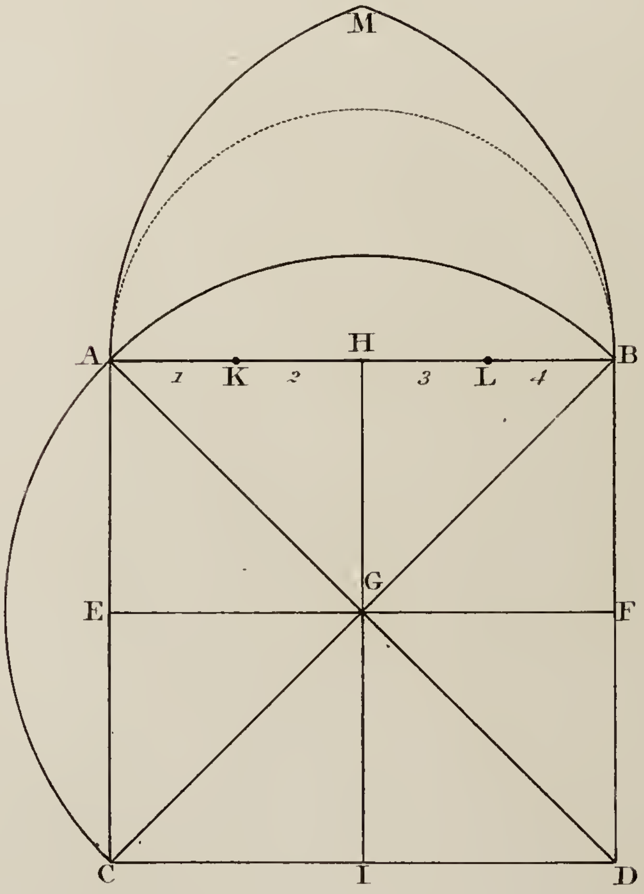
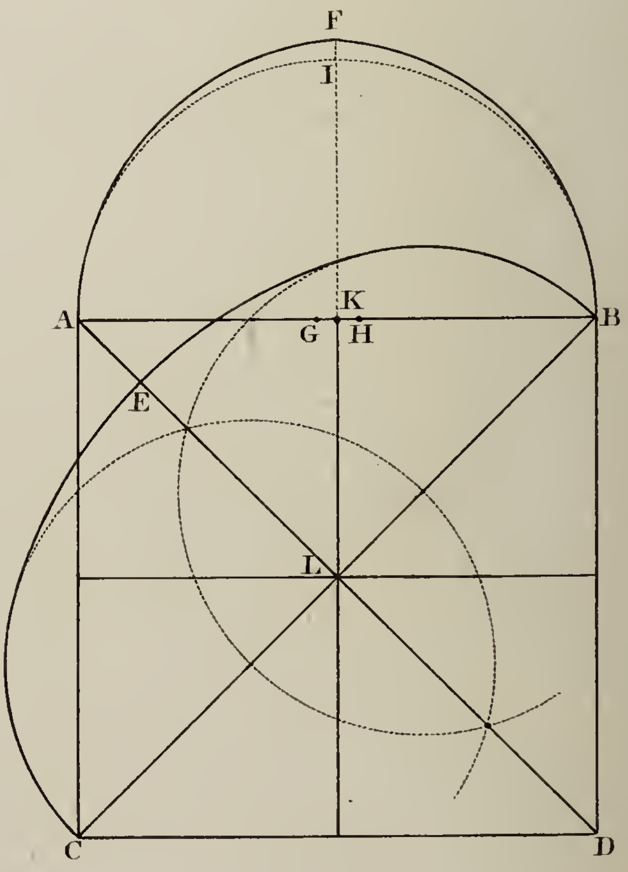


Fig. 7.



and in the figure which Albert Durer directs us to construct. Six of these are often inserted in a circle, and compose a figure very easily drawn, which is not uncommon in Norman Architecture.* Sometimes Arcs of 90° each are made use of, as in the figure *c d*. Four of these produced, by four circles described from the angles of a square, and meeting in the middle of it, like fig. 10, are very common in Gothic Architecture, as ornaments in spaces which would otherwise appear naked; and we find them sometimes in the old Architecture also, as at St. Augustine's at Canterbury.

Plate XXXIII. figs. 1—6 shew the different modes of raising Arches, whose Diameters are unequal, to the same height. Let fig. 1 be a semicircular Arch, to which it was required that the other Arches of smaller diameters should be equal in height. Fig. 2 is the most common mode, by taking the center upon a line AC above the line of the impost BD, and supporting the Arch by the two upright walls AB and CD; in fig. 3 it is done by raising it upon the oblique walls DE and FG; in fig. 4, by taking a greater portion of a circle than the half for the Arch; in fig. 5, by taking two centers upon the line of the impost (the diameter), and so making the Arch a little pointed; in fig. 6, by a Pointed Arch of three centers.

Fig. 7 shews how a low pointed Arch AFB would be produced by vaulting over a square upon diagonal oval bows; from Mr. Essex. When they first vaulted a square upon bows, they not being able to make a semiellipsis for the Bow or Arch to be set upon the diagonal AB or CD, used the oval Arch CEB instead of it, which being higher than the old elliptic Arches formed on the diagonals by the crossing of the cylindric vaults, *i. e.* higher than the semicircle AIB on the sides of the square AB, BC, CD, and BD, they were absolutely obliged to raise each of the Arches on those sides to the same height, which they did by taking two centers G and H, and making the Gothic Arch AFB, whose height KF is taken equal to LE, which is pointed, but not much.

Fig. 8 shews how a higher pointed Arch was produced by vaulting over a square, upon semicircular diagonal bows. From the same.—If the bow CAB, raised upon each of the diagonals AB and BC, be a semicircle, each of the four Arches upon the sides AB, BD, DC, and CA, must be the Pointed Arch AMB, whose altitude HM is equal to CH, the height of that semicircle, which differs so little from the Gothic Arch whose centers are taken upon the diameter at the distance of one quarter of its length from its extremities (Plate XXXVI. Fig. 2, N° 2), that they made no scruple of describing that instead of it. From the same.

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* We have it in the Old Chapel in Barnwell Field, near Cambridge.

Plate XXXIV. fig. 1, is the elliptical Arch, or semiellipsis, which the angle of the groin makes in the ancient cross-vaulting, when the two crossing-vaults are equal and cylindrical, and the plan a square, as in fig. 2. Fig. 3 is an oval Bow formed upon the diagonal of the square plan, fig. 4, used instead of the elliptical Arch, fig. 1. It is formed by dividing the diagonal *a b* into three equal parts, one of which being taken for the radius, with the centers *c* and *d*, describe the two equal and intersecting circles. Likewise with the centers *a* and *b*, the two segments *f c k*, and *e d l*; and from the points of intersection *h* and *g*, with the radii *g f* and *h l*, draw the Arcs *f e* and *k l*, which completes the figure *a*, *f*, *c*, *b*, *l*, *k*. Fig. 5 is the diagonal cross rib, formed in the same manner with fig. 3, two segments of which, *a b* and *b c*, fig. 6, make the Pointed Arch *a b c*, over the round one. When they used many mouldings on the ribs of the vault, and also on the circular Arch under them, they would appear as in fig. 9, which, having a bad effect, was altered to fig. 10, and this completed the Pointed Arch. Now a circular window under the Pointed Arch of the vault, as in fig. 11, would not have a good effect; they therefore made the window pointed also. From the same.

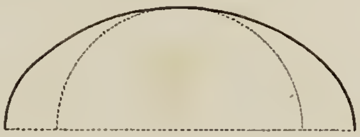
Plate XXXV. Fig. 8, the usual manner of vaulting over a double-square upon bows, when the bows upon the diagonals are semicircles.

Let DCHP be the double square to be vaulted; then the semicircle ABC will be the bow upon either of the diagonals DH or PC; DEC the Bow or Arch upon DC or PH, very little pointed; and FGC the Arch upon one of the shorter sides CH or DP described with the radii QC or n F. for which (as it does not differ much from it) they substituted the simple Gothic Arch F g C, whose centers are taken at the ends of the diameter F and C. KEI will be a flat Arch, part of a circle passing through the points K, E, and I, whose place on the plan is the line LM. But the crown of the vault over LM was sometimes level, and the Arch FGC raised to the height of E, as in the Presbytery at Ely; which produced the high sharp-pointed Arch F e C, which is found to be exactly the same Arch with that at N° 2, in Fig. 4, Plate XXXVI. whose centers are taken on the diameter produced at the distance of one half of that diameter, on the outside of the Arch. From the same.

Fig. 1 is meant to shew that a series of Gothic Arches may be drawn from the same two centers *a* and *b*, that will be all different; which series may be carried on in infinitum, from the middle point *c* between those centers, where the circles only touch, and do not cut each other, by continually increasing the length of the radii.

Plate XXXVI. Different Gothic Arches of two centers. Fig. 2, examples of

Fig. 1.



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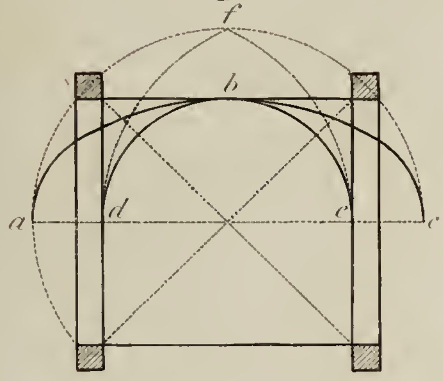

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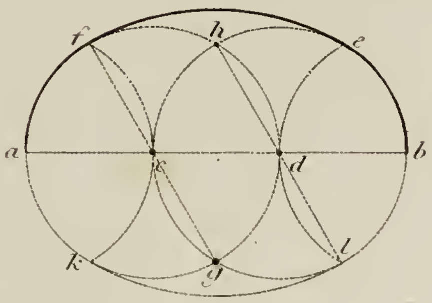

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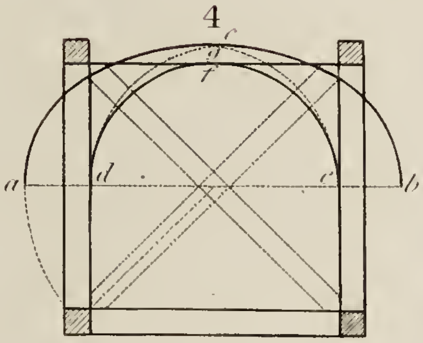

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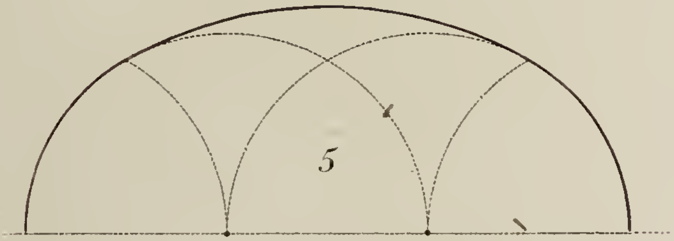

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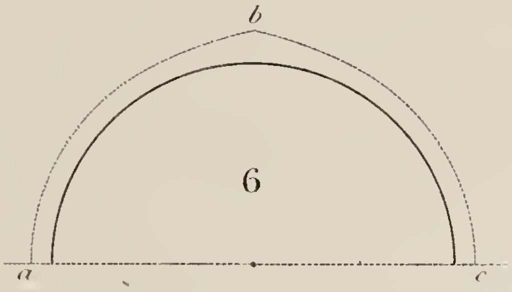

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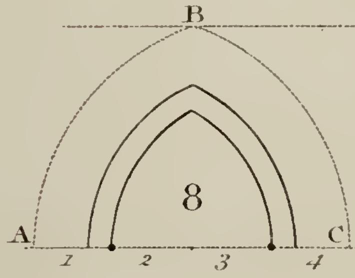

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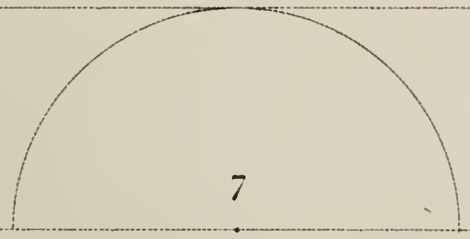

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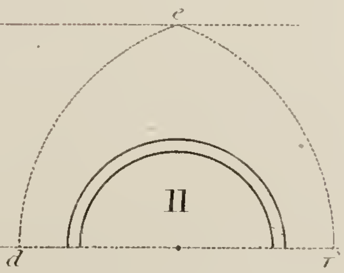

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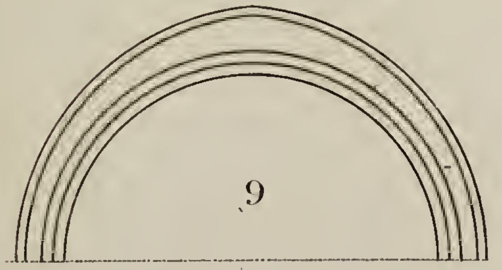

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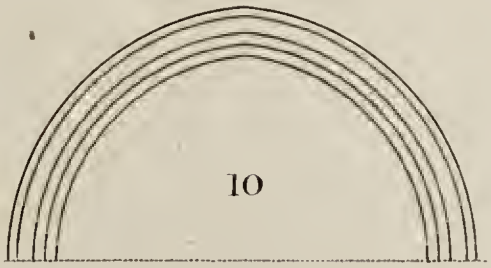

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Fig. 8.

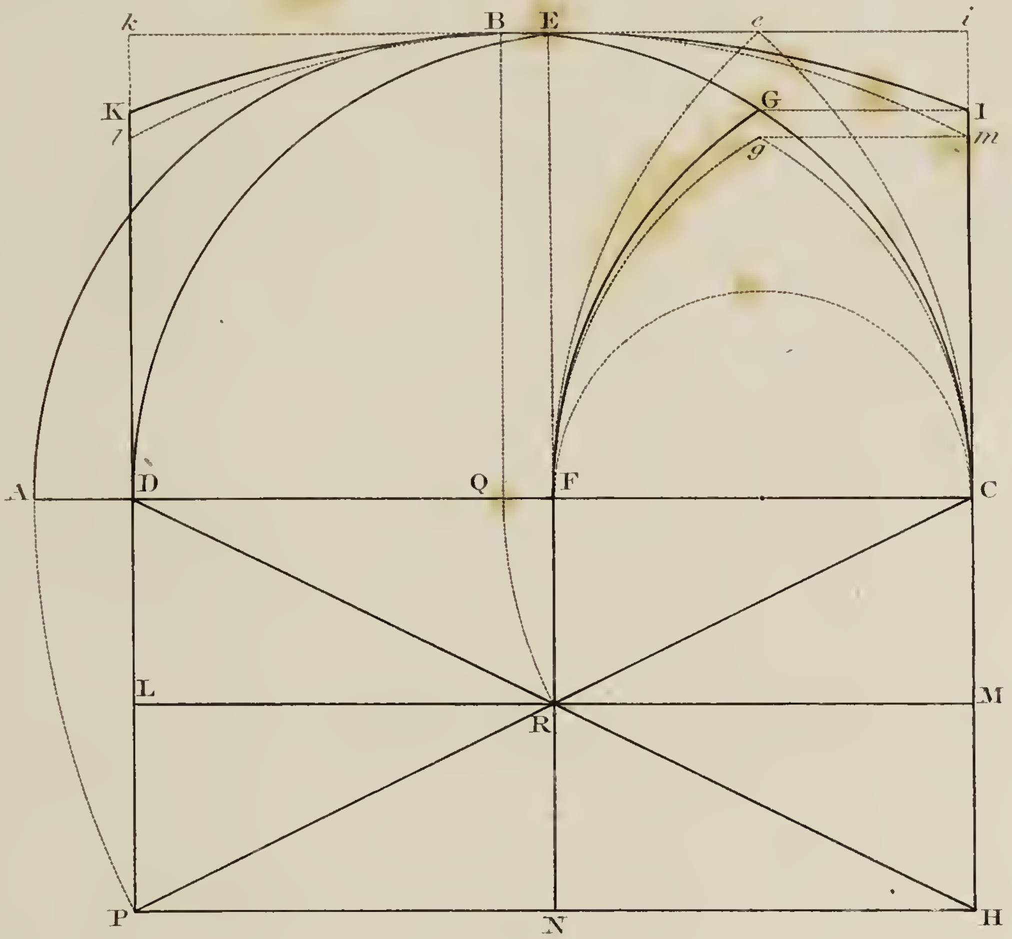

Fig. 1.

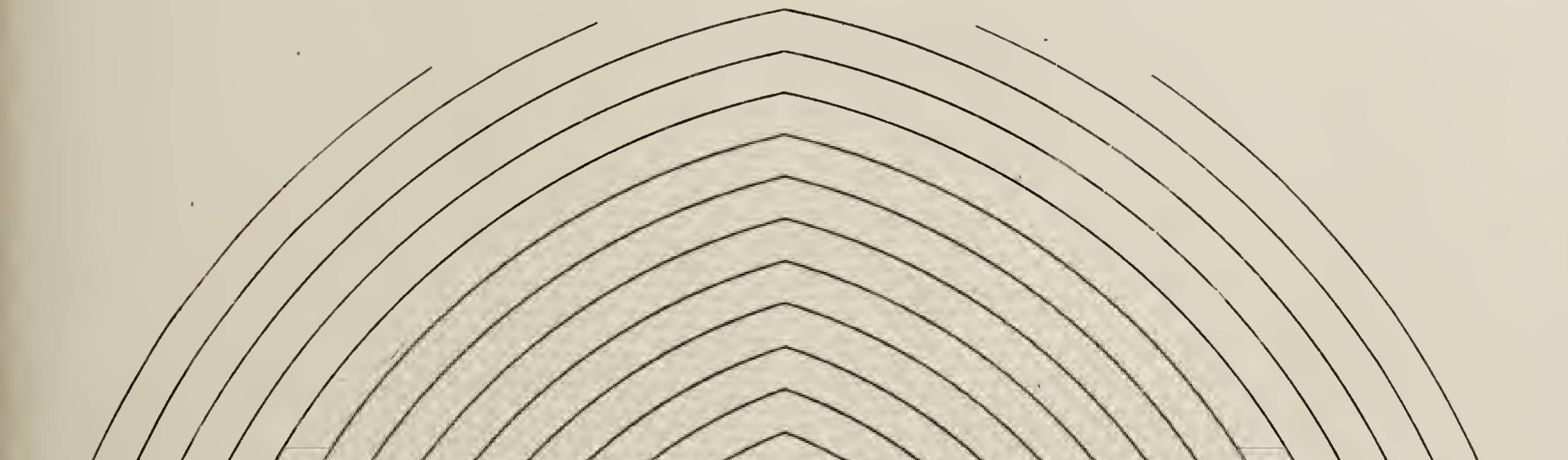

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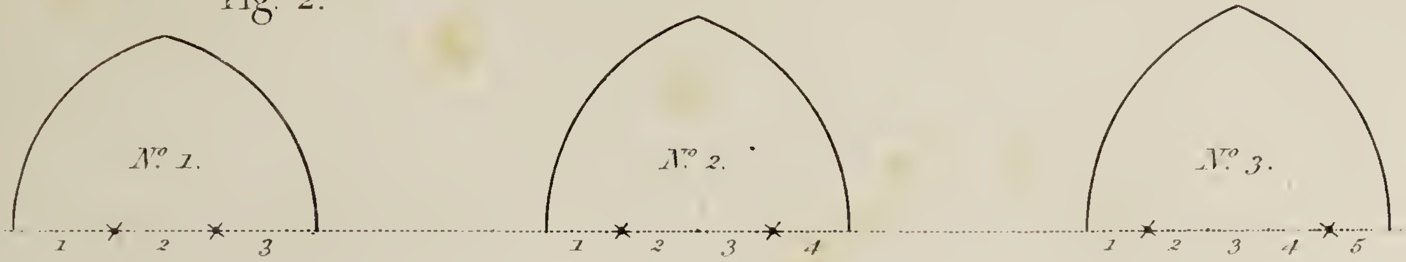
Fig. 2.



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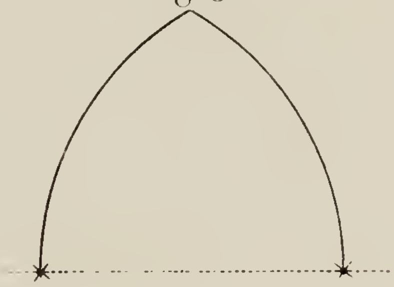

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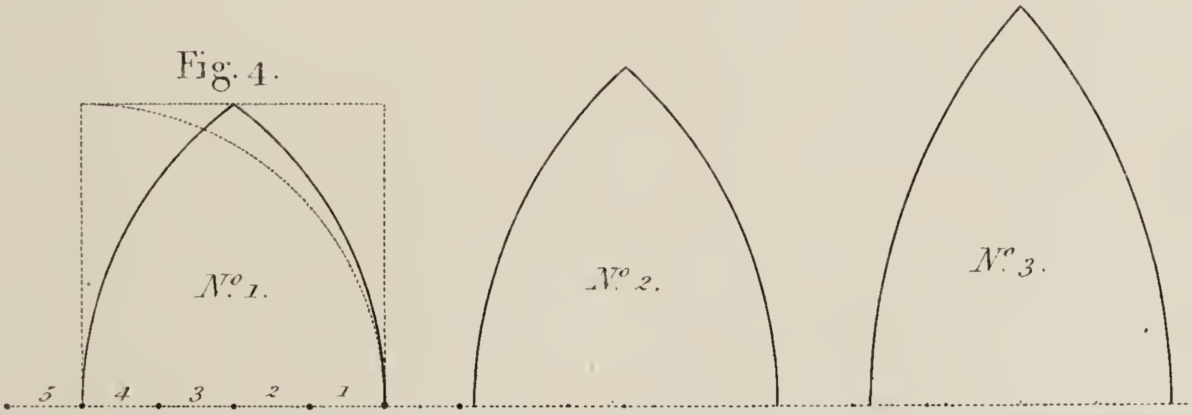

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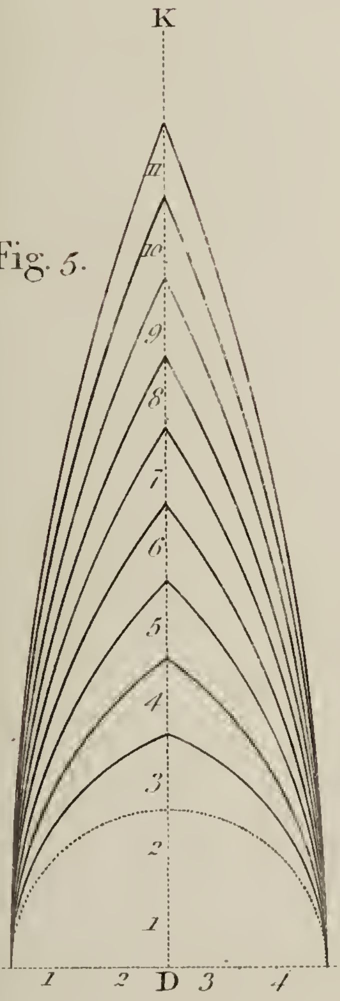

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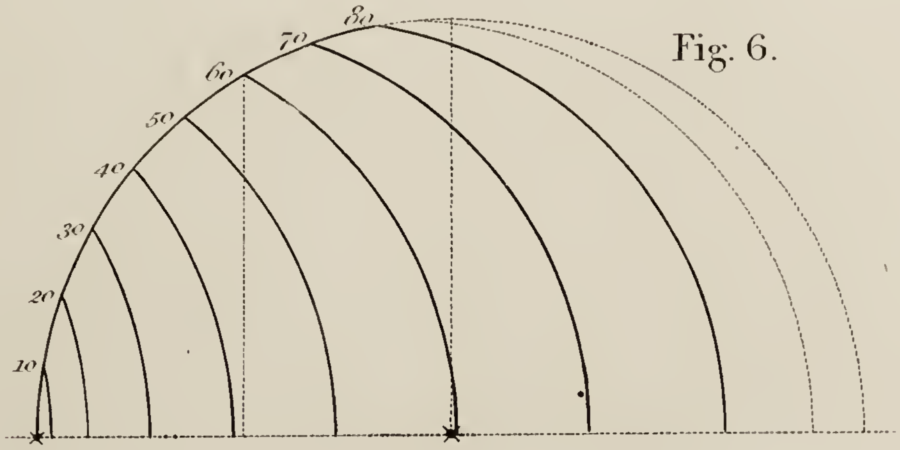

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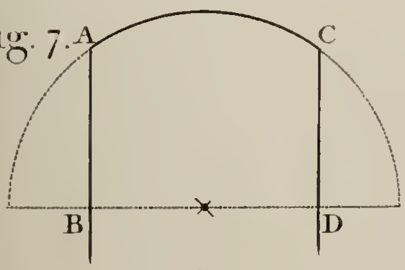

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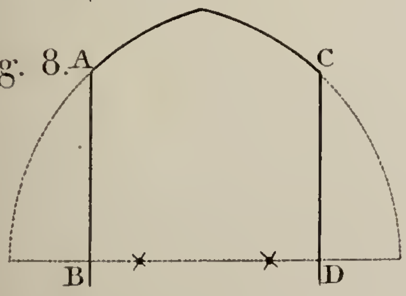


Fig. 9.

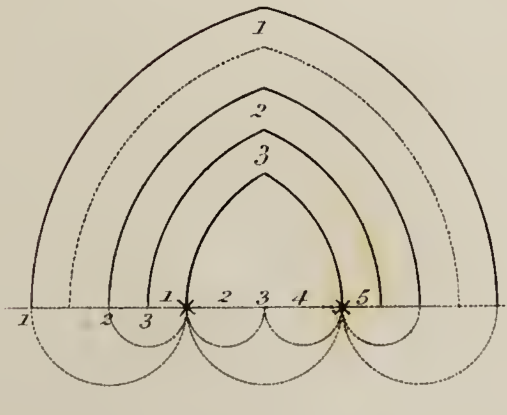
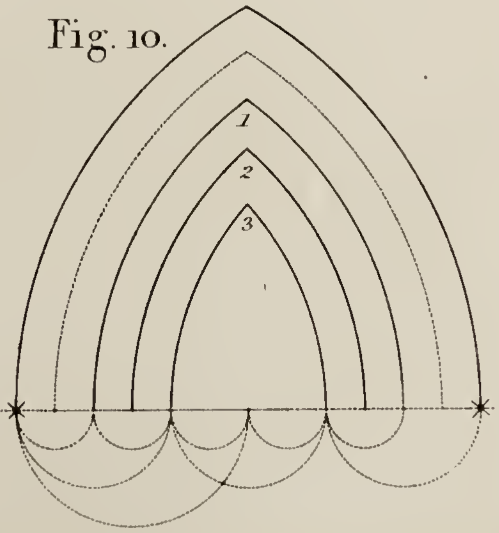


Fig. 10.



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three Gothic Arches, whose centers are taken upon their diameters: in N° 1 they are taken at the distance of one third of its length from its extremities; in N° 2 at one fourth, and in N° 3 at one fifth. In fig. 3 the centers are taken at the ends of the diameter. Fig. 4, examples of three Gothic Arches, whose centers are taken on the outside, upon the diameter produced both ways: in N° 1 at the distance of one fourth of that diameter from the spring of the Arch; in N° 2 at one half, and in N° 3 at a distance equal to the whole diameter.

Fig. 5 is a series of Gothic Arches formed according to their altitude, in proportion to their diameter: as, for example, taking it equal to one half, three fourths, the whole, five fourths, six fourths, seven fourths, &c. of that diameter.

Fig. 6 is a series of Gothic Arches, formed according to the number of degrees which each of the Arcs that form them contains, as 10°, 20°, 30°, 40°, &c.

Fig. 7 and 8 are truncated, or imperfect Arches.

Fig. 9, an instance of a Door, or other Arch, which may contain all the four different Arches exemplified in Fig. 2 and 3, besides others.

Fig. 10, an instance of a Door, or other Arch, which may contain, besides others, all the four different forms of Arch exemplified in Fig. 3 and 4.